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Table of Contents.....Text Page 704
Advertisers' Index .....Advertising Page 110
Classified Advertisements....Advertising Pages 72-78
Buyers' Directory.....Advertising Pages 82-108
Our Publicity Page.....Advertising Page 68

Simplification the Price of Success

ECONOMISTS and legislators are constantly preaching standardization, simplification, and the abandonment of unnecessary products. Possibly this is seed sown in fruitful ground and perhaps not. However that may be, in the rubber trade at least there is a wide-spread urge toward simplicity in product. Harking back to war times a great light was shed upon the multiplicity of types, sizes, colors and styles, when the trade was forced to abandon what was not actually of paramount necessity. The elimination of hundreds of styles in water bottles was one very graphic instance of that practical simplification.

It is good to be able to report that this sort of work has gone on and is recognized as of ever increasing importance.

As for instance, one of the long established factories has cut its product from several hundred items to ninety. The goods eliminated were highly competitive and while others made a profit on them, the old company only "broke even." Another firm doing a large business in mold work, revised, consolidated and discarded compounds, reducing a total of nine hundred to seventy, turning out just as great a variety of goods without criticism on the part of customers.

Right in line with this is the work of George E. Hall, president of the Boston Woven Hose & Rubber Co. Analyzing jar ring production he found 6,200 different brands and trade marks, made up of 83 different styles and sizes, all designed for use on two sizes of fruit jars. After five years of practical educational work among the buyers, the brands have been cut down 90 per cent, thus saving a great amount of work and effecting a marked reduction in manufacturing cost.

It is gratifying to note that in all lines of rubber manufacture the same practical work is being carried on. It is sometimes done through the Rubber Association departments, sometimes by individual manufacturers, but it is all for the benefit of the trade as a whole.

Right in this line is the opportunity to greatly reduce the market grades of reclaimed rubber. At first blush there are apparently few in number, actually they run into hundreds. One manufacturer confesses to fifty active grades and as many more alive, but inactive. Another reports progress in eliminating numbers of unnecessary grades. Still another has cut his down to six only, and so on. Just now with reclaim coming to the front there is danger of further multiplicity of types, grades, and prices. A general standardization without in any way injuring individual products would seem to be the part of wisdom.

By the same token, is not the time ripe for a general cut in the vast number of grades of wild rubber? Before plantation rubber became a factor, there were hundreds of grades divided roughly as follows: Africa 150 to 200 grades. Asia and Oceanica 50 grades. Central and South America 70 grades. Central washing plants would at least clean this rubber and reduce the sorts appreciably, but why not copy the Chinese handlers of gutta. With very inexpensive plants in such centers as Singapore, they assemble scores of types of gutta, clean and mix them and produce a few well established sorts that the markets accept without question and with profit to all concerned.

As, "Eternal Vigilance is the price of safety," so too Simplification is the price of Success.

The Firestone-Liberia Project

IT will be interesting to watch the attitude of the American negro toward the opening up of Liberia by American capital. The little but surprisingly rich African republic has long been a sort of fetich to them. When their somewhat resentful fears are allayed and they see that only good can come through development of natural resources they will yearn to have a hand in the good work. That thousands of negro laborers may yet turn their steps toward Liberia is a probability. Thus will the labor problem be solved naturally and satisfactorily.

There is also the effect that it will have upon the whole of Africa. If successfully administered, the American "mandate" which does not aim to exploit or rule the natives, may cause a revision of all the others on the Dark Continent. In the past the Golden Rule has not been scrupulously observed in dealing with races other than white. The result is resentment, unrest and mutiny. It is beginning to be evident, that a new spirit is entering into the dealing with "subject races." The British have done much in revising old time methods and may be trusted to do more. The Dutch and the French in time also will see the profit in fostering self-respect and independence among the dwellers in their vast tropical possessions. In all of this America is pointing the way. May success attend the Firestone plantation.

To Reduce Rubber Taxation

THAT it is expedient that an exhaustive, country-wide survey should be made of the multifarious taxes to which rubber manufacturers are being subjected, is shown impressively by President Jacob Pfeiffer of the Miller Rubber Company in a recent article in *The Nation's Business*. He points out that of two payrolls maintained by his company, the one for the workers rises and falls with the ebb and flow of prosperity, while the other for the tax collectors is not only inelastic and to a considerable extent unwarranted, but it is menacingly progressive. In 1923 the workers' payroll was less than $7,800,000, but the tax gatherer got away with over $1,000,000. In other words, for every $100 paid in wages, $13.40 went for taxes. Such confiscation of earnings, he avers, equalled $20.11 per share of common stock, the holders of which for four years have been virtually robbed by the tax collectors.

The varieties of tax include four federal and nineteen state and municipal; and, in addition to the time-honored levies for obvious public needs, there is a strange assortment of state excise, bonus, emergency profits, gross sales, merchants, stamp, entrance, occupational, and registration taxes. An especially obnoxious tax is a federal excise exacted only on the products of rubber manufacturers. That discriminatory levy, Mr. Pfeiffer regards as intolerable.

Such burden of taxes can easily offset the advantages hard won through economy and efficiency, and it could and should be lightened.

It is suggested that the time is opportune for the employment of a few real experts to canvass the entire tax situation and to deduce concrete propositions for reform that may be urged upon the numerous governing bodies. The suggestion plainly merits the approval, and the protagonist in the fight for fairer taxation deserves the hearty cooperation of rubber manufacturers. As a matter of fact, they have been altogether too complaisant and too easily discouraged in dealing with such matters. To bring about tax reform there is being formed a national organization known as The Taxpayers Union, of which Mr. Pfeiffer is a very active member.

THE INCREASE IN GUAYULE SHIPMENTS FROM MEXICO is very gratifying. When crude rubber was really high it will be recalled that some fifteen extraction plants ran day and night with an annual product of nearly 20,000,000 pounds. With ample areas of shrub and new mechanical equipment this amount is again possible.

"MOTORCOACH" INSTEAD OF "BUS" IS WHAT THE American Electric Railway Union and the Society of Automotive Engineers adopt as official. As the vehicle has now grown up, and is not only a useful but a really beautiful product it desires a dignified name. One would not call an emperor the "Emp," nor should the modern elegant Motorcoach be longer known as the Bus.

WE HAVE BEEN TROUBLED FOR YEARS THAT SUSPENDERS, one of civilization's pioneer rubber products, should not be more generally used. It would seem, however, that the tide is turning. The daily press featured the leader of counsel in the recent Evolution case before the Tennessee courts as coatless and snapping his lavender "Gallusses" as he faced a coatless and perspiring audience.

THE EDITOR OF OUR AKRON CONTEMPORARY IS REported to have said that the present rubber situation is likely to bring about strained relations between the United States and Great Britain. We do not believe the newspapers quoted Mr. Babcox correctly, and confidently look for an emphatic denial on his part.

"CO-ORDINATOR OF PURCHASE" IS THE TITLE OF THE lately-created Buyer-in-Chief of all Federal equipment and supplies. Now, if an executive order would create an "Accelerator of Payment," Uncle Sam would become a desirable customer.

NUMBER PLATES FOR CALIFORNIA MOTOR VEHICLES FOR 1926 will be of two kinds. One for those who use solid tires, the other for pneumatics. The plan, if generally adopted, would be quite a help statistically.

IF YE FULFIL THE ROYAL LAW ACCORDING TO THE Scripture, thou shalt love thy neighbour as thyself, ye do well.—James, 2:8.

Low Pressure Tires of the Past

Early in 1900 the Editor of THE INDIA RUBBER WORLD met Christian Gray, co-inventor with Thomas Sloper, of the Silvertown cord tire. Mr. Gray explained in detail and with enthusiasm the cord tire principle together with the machines evolved for cord construction. The ideas of cord fabric, larger tires and lower pressure were all made plain. Two things resulted from this interview. First, a personal adoption of low inflation of tires, bicycle and automobile, which the writer has indulged in spite of inflation tables and garage men. Second, a habit of noting expressions in motor, tire, or other journals that would affirm or contradict Mr. Gray's views. The following excerpts may therefore, because of the Putnam patent, be of interest. They are from British and French sources, and consist of parts of addresses before learned societies, articles in publications as the India Rubber Journal, Cycle and Motor papers and the like, and with one exception all appeared before 1910.

From the Continental Tyre & Rubber Co., Ltd.

"MORE than half the tyres we receive daily for repairs have become defective through insufficient inflation. The damage caused in this way consists in the cutting of the edges of the outer cover, or in the abrasion of the outside layer of rubber in the place where it comes into contact with the edges of the rim and the inner tube, which, owing to its being always nipped, gets full of numerous small holes, and in time becomes quite decomposed.

"Baron de Mauni in a recent work has given an account of some experiments which he made on different tyres, particularly pneumatics. He showed that if two wheels with tyres of equal widths supported equal loads the one that has greater arc of contact with the ground will travel better than the other. With a rigid tyre such extended contact can only be secured by increasing the diameter of the wheel, which is impossible beyond certain limits, so that the tyre will sink into the ground by an amount proportional to the weight carried. With rubber tyres the increased area of contact is due to the elasticity of the material and not to the increased diameter, so that the wheel does not sink into the road. Professor Baker's experiments seem to show that on good roads the width of tyre has little effect on the resistance, and that even on bad roads the advantage lies sometimes with the wide tyres and sometimes with the narrow ones, according to circumstances. Arguments have been advanced in favor of both wide and narrow tyres, but nothing very definite seems to be known on the subject; according to M. Michelin, if we reduce the width of the tyre we reduce the adhesion to the ground, which is already little enough. As a case in point, he mentions that M. Serpollet, in order to attain a speed of 120 km. (75 miles) per hour on the *Promenade des Anglaises* in 1902, had to deflate his tyres and thus get a larger surface of contact with the ground. Besides, in order to get a narrow tread, it is necessary to give to the tyre a form other than circular, and this shape can only be retained at the expense of its flexibility. Consequently a tyre of this description will be subjected to greater internal friction in its fabric than one naturally circular in section, and the energy wasted will be therefore greater. The whole question, however, is very much open to discussion, and the recent congress may offer to the opposing schools an opportunity of coming to some understanding in regard to this matter."

India Rubber Journal

R. W. THOMPSON, WHO IN 1845 INVENTED AND PATENTED THE PNEUMATIC TIRE — AND AS MANY HOLD, THE OVERSIZE, BALLOON, LOW PRESSURE, COMFORT TIRES.

From A. J. Wallis Taylor, C. E.

"Hard blown tyres follow Professor Kick's law—i.e., the ratio between the pressure required and the deformation produced is constant, and the curve is a straight line, but as the tyre becomes less inflated the ratio of pressure to compression decreases gradually as the pressure increases. The natural deduction from this is that very hard blown tyres have a constant degree of elasticity under all degrees of compression, while soft blown tyres compress easily under small pressure, and less so as the pressure increases."

From Thomas Dunn

"Provided the surface is perfectly level and hard, there is very little vibration, and the tread of the tyre must be reduced to the narrowest dimensions, provided that it will not cut into the surface; but in proportion as the surface is softer and the weight imposed upon the wheel is increased, so must the width of the tread be increased in exact ratio with the desired resiliency of the tyre.

"Dealing first with compression, we have to consider the effect caused by meeting an obstruction.

"If the tyre is equally balanced as to resiliency and width of tread for a level surface when it meets an obstruction the portion of the tyre first affected is that just about to undergo the greatest amount of compression by impinging upon the ground, and which already receiving a portion of the ground pressure, distributed throughout the remainder of the tyre, according as the particles thereof are capable of imparting and taking up the vibration.

"As to the air pressure requisite to carry given weights in tyres of the ordinary construction of various sizes, an elaborate table has, as is well known, been prepared and published by one of the largest firms of tyre manufacturers, and we are content to assume that the pressures given in the table are correct for these tyres; but we must here say that these pressures are all considerably higher, and in some cases very much higher, than we believe it is desirable to use in pneumatic tyres, and that it seems clear to us that tyres for motor cars can never be rendered as efficient for their purpose as they ought to be till their construction has been so modified that they will cease to require such high pressures. The reason of this is, that the heating of

pneumatic tyres, which, being the cause of their limited durability as at present commonly constructed, is one of the most serious difficulties connected with their use on motor cars, is more or less proportionate to the air pressure employed in them, since the heating appears to be chiefly due to the friction between the fibres of the fabric of the tyre as it undergoes the flection attending their action in use; and just as the tendency of a bearing to heat is in proportion to the pressure it has to bear per unit of area, so this friction in the fabric of a tyre is proportionate to the pressure *inter se* of the fibres forming it, which pressure again is in proportion to the tension put upon the fabric by the air pressure. It is to be noted in this connection that, while the durability of bearings may be increased by making them of greater breadth, so as to reduce the pressure on their surfaces per unit of area, the friction between the fibres in the fabric of a tyre cannot be reduced by increasing their number, so as to reduce the tension per fibre, since the thickening of the fabric which this would involve would occasion an increase rather than a reduction in the friction occurring on its flection. It is therefore essential to the reduction of the heating of tyres to a minimum to reduce to a minimum the air pressure requisite in them. This may be effected to the extent of from 40 to 60 per cent, without impairing but rather improving the merits of the tyres in other respects, by a modification of the ordinary construction of tyres which is well known to those who have studied the subject of tyre construction.

"We may also remark that the two features of construction in tyres, next in importance to the use of a minimum air pressure for reducing the tendency to heating to a minimum, are the making of the fabric and the sides as thin as practicable and the avoidance of the crossing of threads under tension in the fabric.

"We desire now to add to what we said on necessary air pressure in proportion to size and weight carried that another interesting test for this property, similar to that last described for range of spring, is to take the tyres at rest, quite deflated but carrying their intended loads, and to inflate them by 10 pounds at a time up to their full requisite pressure, noting accurately the amount the axles rise with each increase of pressure and to compare the results. In this, as in the other similar case, the differences in the action of different tyres will be found to be greater than might be expected.

"The chief feature I advocate as essential to the construction of a pneumatic tyre reasonably adapted for its purpose is a tread not enormously thickened or rounded towards the road, but made traversely inflexible, not necessarily thicker than an ordinary tread, flat, and while broad in the base narrower towards the road. Treads thus made, and embodying another vitally important principle which I must not now take up space to describe, even applied to ordinary tyres, do not slow them or reduce their resilience, but, on the contrary, improve the running of the tyres and have the remarkable effect, besides other effects of less but still great practical importance I need not detail, of enabling a tyre to carry the load with about half the air pressure otherwise necessary and practically doubles its range of spring, thereby practically doubling its efficiency in action.

"It seems to me that if the chief function of a pneumatic tyre is, as I argue it must be held to be, to pass as easily as possible over the innumerable small undulations of an ordinary road surface, the chief property requisite in it is that in proportion to its size it should have the greatest possible range of spring in its action, and that it should compress and expand again in passing over these undulations as easily as possible. I know, too, that if properly constructed, pneumatic tyres can be produced which will do this in a much more efficient manner than the ordinary tyres of today, and which may at the same time be made much more durable and reliable than these tyres usually are. But to do this it is most necessary that the sides of the tyre should be as flexible as possible and as free as possible to expand as the tire compresses on an undulation on the road."

From A. Foster, Esquire

"Probably all bicycle riders have found by experience that there is a big advantage when riding over a stony road in having the tyres rather slack, as there is so much less jolt and comparatively little loss of driving power. Why is this so? Given a tyre inflated to a suitable degree for the load carried (a dead hard pneumatic is not much better than ordinary rubber), and see what happens.

"The surface is practically smoothed out, and in this manner the small irregularities dimple the tyre, energy is thus consumed, but almost the same amount of thrust is given to the tyre on leaving the projection as was required to dimple the tire on contact.

"Thus a pneumatic absorbs minor road irregularities (and larger depressions, etc., to a smaller extent), but the power used in so doing is returned to the wheel as forward thrust as the wheel moves on, instead of being consumed by compressing the springs or lifting the weight of the car vertically.

"The chief reason why a pneumatic tyre, as still commonly constructed, is, notwithstanding the imperfections of the construction, so much more efficient in absorbing vibration than any other device, is, I believe, simply that the body of compressed air within it is almost indefinitely more elastic than rubber or any form of spring, and it is a truism to say the supreme object in the design of pneumatic tyre should be, while providing amply for durability and reliability, to use to the best advantage the elasticity of the compressed air. This action is only impaired by any elasticity in the materials of the tyre. I would add that careful experiments have shown that, while pneumatic tyres as still commonly constructed swallow small obstacles better than tyres designed to pass most easily over the undulations of a road surface do, they have only about half the range of spring in proportion to their size that tyres may advantageously be constructed to yield, and that, superior as they are to all other vibration absorbing devices, they consequently absorb in running very much more power than there is any occasion they should."

From David Moseley & Sons, Ltd.

"Compressed air in motion generates heat. The faster the speed the greater the heat; the greater the heat the greater the strain on the tyre. The larger the tyre, the less the increase of heat and strain."

From Report on Stanley Show

"The new tyres to fit standard 135 mm. rims are now ready. They are wider and deeper in section than other makes of nominally corresponding sizes and are therefore more comfortable and give a considerably greater mileage."

From a Racing Authority

"There has been considerable discussion lately upon the question of air pressure in pneumatic tyres, and many of the tyre manufacturers have issued a scale of pressures which they recommend for tyres of the various sizes, according to the load carried. This must of course be looked at in two ways. The tyre manufacturer wishes the pressure to be adjusted so that the tyres last sufficiently long to satisfy the motorist, but on the other hand, if tyres are blown up to the extent recommended by the tyre manufacturers the resilience obtained is considerably reduced, although for high speeds it has been believed that the higher the pressure of inflation, the greater the tractive efficiency of the tyre. Mr. S. F. Edge has been carrying out some experiments on the Brooklands track upon a 40 h.p. 6-cylinder Napier, with different sizes of Dunlop tyres, and with varying pressures, the air pressure in the tyres varying from 35 pounds to the square inch to 100 pounds to the square inch, and the attached schedule will show the tests, the sizes of the tyres used, the pressure per tyre, the weight of the wheels, and the speed attained.

"The timekeeping was done by the official timekeepers of the

Automobile Club, and the car was run round the track each time so as to insure full speed over the measured quarter of a mile. The results of these experiments were at first sight rather astonishing, as it would appear that the speed of the car was almost unaffected by the pressure in the tyres, nor did it seem to make much difference as to the size of the tyres. The car seemed equally fast whether the tyres were the 120 mm. to all wheels, or 100 mm. to all wheels, or whether the air pressure in the tyres was 35 pounds or 100 pounds. Although these experiments at the moment appear to be quite inconclusive, they really lead us to one of the greatest moves forward that the automobile movement has had for some time, and if by further experiments it can be conclusively proved that a small air pressure in the tyre is almost equally good from a speed point of view as a high air pressure, it then only remains for the tyre manufacturer to see if he can make a tyre which will wear well with small air pressures. If this is the case it means then that we should have our motor vehicles running upon exceedingly comfortable air cushions, as undoubtedly at the present moment, owing to it being desirable to pump one's tyres hard to get the maximum wear out of them, we sacrifice practically all, or nearly all, the comfort that a pneumatic tyre should give.

"In seeking for the cause of the lack of reduction in speed by softness of the tyre, I, of course, had a predetermined idea that a soft tyre necessarily meant the car running slower, but really when one takes personal experience into the question one's racing experience teaches one that, until the tyre actually allows the rim to bump the road or flies off completely, one does not notice a slack tyre when racing, so far as a reduction in speed is concerned."

From the Palmer Tyre, Ltd.

"Few motorists seem to consider that proper inflation is a most important factor in prolonging the 'life' of a tyre. We were the pioneers in urging on the motorist the absolute necessity of proper inflation.

"It is interesting to note in this connection how much the larger tyres contribute to comfortable running on account of the lower air pressures necessary.

"The Palmer Tyre Co. have issued a new table, recommending considerably lower pressure than has been their wont, amounting to from 20 to 25 per cent reduction below the minimum pressures recommended by other tyre makers. It is obvious that the company, being of such high standing, would not issue any recommendations until they had thoroughly satisfied themselves by practical tests that their recommendations were fully justified."

From Mr. Frederick Eastmead

"Mr. Frederick Eastmead had been carrying out some experiments on Sunrising Hill, in Warwickshire, driving a 20 h.p. Sunbeam car from a standing start, making each ascent with different pressures in his tyres, which were taken by a Southhall gauge and checked by a Robert's gauge. In the first four tests all four tyres were pumped to equal pressures in each case; in the fifth the back tyres were inflated to 90 pounds, the front being pumped to 75 pounds. The extreme variation between the slowest and the fastest times was only 19⅘ seconds, while the time for the test in which the tyres were inflated to 60 pounds was the fastest of all. Even when the pressure was reduced to 40 pounds the time was only eleven seconds slower than the fastest, this pressure, of course, being considerably below a reasonable one."

From A. Peake-Jones

"When war broke out both British and foreign factories were producing the motor cover of 'skimped' section and canvas casing which had held sway for many years, practically unchanged except for variations of tread pattern, which ranged from smooth surfaces through a whole gamut of grooved, recessed and raised designs.

"An uncomfortably high air pressure was essential for these tires, as the casing developed great heat through internal friction in the canvas which, of course, became greater as the air pressure was reduced and the walls were subjected to more flexion.

"This outstanding weakness of the canvas tyre received a great deal of attention during the war, and improvements were effected both here and overseas by increasing air capacities (enlarging sections) and frictioning the canvas instead of merely proofing it. Tests of hitherto unexampled severity were made possible by the exigencies of war service, and valuable results could be obtained very quickly.

"A noteworthy feature of war achievement was the production of aeroplane tyres and landing wheels, chiefly by Palmer, whose resources were strained to the uttermost by this new demand.

"Towards the end of the war, French and American manufacturers, still pegging away at the problem of internal friction heat and the liability of the canvas tyre to burst or collapse when under-inflated extended to motor cars tyres the use of weftless fabric such as had been employed in British cycle tyres twenty years before. This fabric has a warp of stout cords and a weft of fine threads, just sufficient to hold it together for convenient manipulation, and owing to this 'openwork' weave it is possible to insulate and isolate each cord from its neighbor as well as each ply from the next. Casings built up from this material form the foundation of the universal cord tyres of today, upon which most British manufacturers are concentrating for their entire range of tyres—cycle, motor-cycle and car.

"Enough has been said to reveal the reasons for the cord tyre's greater endurance, which is at least twice, if not three times, that of the canvas type. A secondary and even more welcome advantage to the user is that the cord tyre may be safely ridden at a lower air pressure, and this brings us naturally to the second great post-war change in motor tyre construction —the new "balloon" or "comfort" tyre. It was the success of the cord casing that made balloon tyres possible and inevitable. With a casing capable of cool and almost frictionless running, even under constant and severe flexion, air pressures could be reduced to the point of maximum luxury, the only contingent necessity being to reduce the weight and thickness of the walls and provide for load-carrying capacity by a greater volume of air."

AMERICAN TIRE EXPORTS—FIRST QUARTER OF 1925

Statistics prepared by the Rubber Association show that during the first quarter of the present year the United States has exported 400,428 automobile casings, 26,071 solid tires, and 376,444 inner tubes. The leading customers for the tires included: Argentina, whose purchases for the three months totaled 45,104; England, 38,915; Brazil, 26,814; Australia, 20,709; Cuba, 19,243; Mexico, 18,940; Hawaii, 18,724; the Philippine Islands, 18,247; Denmark, 18,242; Japan, 13,415; Uraguay, 13,142; New Zealand, 12,962; and Porto Rico, 12,580.

Argentina also stood first as an importer of inner tubes, taking during the three months period 63,772; while Cuba followed at 32,116; Denmark, 23,131; Brazil, 21,181; Hawaii, 20,836; England, 17,788; Australia, 17,305; and New Zealand, 9,095. England also imported during the quarter 6,168 solid tires, other noteworthy customers being: Australia, 2,951; and Cuba, 2,795.

DURING THE FIRST QUARTER OF THE PRESENT YEAR THE UNITED States has imported 203,188,394 pounds of crude rubber, value $66,101,814, as against the 1924 importation for a similar period of 166,103,501 pounds, value $41,349,155. From the above figures it is computed that the average price of rubber per pound in 1924 was approximately 25 cents, as compared with 33 cents for 1925.

Americans to Grow Rubber in Liberia

Firestone Project Includes Mature Hevea Plantation of 135,000 Trees and 1,000,000 Acres of Land—The Story of Rubber in the Negro Pepublic—Present Planting Conditions and Prospects

AMERICAN interests headed by Harvey S. Firestone, president of the Firestone Tire & Rubber Co., Akron, Ohio, have practically concluded negotiations for an extensive tract of land in Liberia, West Africa, to be utilized for growing plantation rubber on a large scale. It is understood that the tract comprises approximately 1,000,000 acres of land, including a Hevea plantation of 1,100 acres established by the Monrovian Rubber Co., Limited, originally a British project, but later, after the bankruptcy of the company, becoming the property of the Liberian Government. Some 135,000 mature Hevea trees now growing on this early plantation will be utilized for seed purposes on the extensive new acreage included in the Firestone project. The nucleus of an organization is already on the ground preparing to begin planting operations at an early date. With favorable soil, climatic and labor conditions assured by an investigation covering several months by Firestone agents, it is expected that yields of crude rubber from the Liberian lands will be available in approximately five years, while in seven years the output will begin to supply a substantial portion of the American demand.

From "Liberia" by Sir Harry Johnston

$5,000,000 Loan and Fiscal Supervision for Liberia

Coincidentally with the conclusion of the tentative agreement regarding the concession, a plan was arranged for the flotation in the United States of a loan to the Government of Liberia of $5,000,000, a financial commission also being invited to America for the purpose of handling the details of the loan agreement. Under present plans the concession will be ratified by the Liberian Congress as soon as the financial mission has reported that arrangements have been completed for the flotation of the loan.

The terms of the loan are expected to include the right of supervision of customs receipts, and of the entire financial regime of Liberia, probably by a commission of Americans, with American experts acting in most of the important capacities. Since the amount of the loan is to be sufficient to consolidate all outstanding indebtedness of Liberia, and to leave a good margin for needed internal improvement, it is expected that the loan agreement will include provisions against the assumption by the Liberian Government of other foreign obligations without the consent of the financial adviser; against hypothecation of any of the revenues which are reserved for the service of the loan; and against the granting of other concessions to foreign interests without the consent of the supervising authorities.

Why Liberia Was Chosen

In selecting Liberia as the place for establishing a vast rubber plantation, Mr. Firestone chose wisely. Not only has it been proved to be an ideal rubber producing country, with every soil and climatic advantage and a large potential labor supply, but it is also an independent, English-speaking republic of American negro origin with a stable representative government modeled after our own. Liberia was befriended by the United States in 1909-10, and the cordial relations existing between the two republics promise to be still more firmly cemented by the investment of large amounts of American capital in rubber growing, which Liberian officials realize will benefit the country no less than the $5,000,000 loan to put the country on its feet financially. Between the friendship of the people and the fiscal supervision afforded by the terms of the loan, the Firestone interests feel assured of being able to develop a large rubber supply from West Africa unhampered by restrictive legislation.

The Liberian Wild Rubber Concession

From the end of the eighties until wild rubber was superseded by the plantation product, Liberia figured more or less prominently in the important rubber trade of West Africa. In 1885 or 1886 C. W. Meiter, of London, England, obtained the first Liberian rubber concession, which was never really worked. About 1898 a concession for 26 years to collect and export rubber, subject to a royalty to the Liberian Government, and to work exclusively all the rubber on all the public lands and forests throughout Liberia

was granted to a London firm known as the Liberian Rubber Syndicate.

The rubber concession, after passing through several hands without notable accomplishment, was bought in 1904 by the Liberian Development Co., Chartered and Limited. This concern had previously been known as West Africa Gold Concessions, but in 1904 when wild rubber seemed to offer a more immediate return than the exploitation of mineral wealth, changed its name and broadened its activities. A subsidiary company called the Monrovian Rubber Co., Limited, with Sir Harry Johnston as managing director, was organized to take over and work the rubber concession. The Dunlop Rubber Co. provided the working capital and it was agreed that the profits should be divided equally between it and the Liberian Development Co., Chartered and Limited.

Late in 1905 the Liberian Rubber Corporation, Limited, with a capital of £270,000, was organized in London by Alfred Du Cros, Sir Harry Johnston, Sir West Ridgway, Sir Gilbert Parker and Sir Raymond West to take over the Liberian rubber concession from the Monrovian Rubber Co., Limited, also a coffee plantation and other assets for £220,000, and the Dunlop Rubber Co. contracted to purchase the entire rubber output of the new Liberian company for ten years. This Liberian rubber project, however, was so severely criticized in Europe that in 1907 the concession was given up.

Plantation Rubber Beginnings

By 1912 most of the influential men numbered among the early directors of the company had retired and it was decided to reduce the capital to £27,000, to abandon the attempted collection of wild rubber, and to continue for the future as a plantation proposition only. Meanwhile the company had planted considerable Funtumia rubber about 25 miles from Monrovia. Although indigenous and planted successfully in other regions, the Funtumia did not lend itself at all well to plantation in Liberia, and in 1909-10 the area was replanted under expert supervision with Hevea seedlings from the Botanic Gardens of Ceylon. Of the 300,000 trees set out, some 9,000 were ready for tapping in 1913 and in 1916 the plantation was said to consist of 1,100 acres containing a total of 135,000 Hevea trees all in bearing or ready for tapping. This plantation, which represents the only attempt to cultivate rubber in Liberia, is the one being taken over by the Firestone interests from the Liberian Government, which acquired it following the bankruptcy of the British company.

Geographical Features

Liberia extends along the West African coast of northern Guinea for about 300 miles, between the British colony of Sierra Leone on the northwest and the French colony of the Ivory Coast on the southeast, being bounded on the north by French West Africa. Its width inland varies considerably, its greatest being about 200 miles from northeast to southwest. In total area the country comprises about 41,000 square miles, according to the latest boundary delimitation in 1907.

Although there are patches of marsh, generally the swampy bottoms of valleys, with a kind of natural canalization connecting many of the rivers at their mouths, there are few lagoons and mangrove swamps compared with the adjoining littoral of Sierra Leone or that of the Ivory Coast. In fact, the coast rises in some places rather abruptly from the sea and the whole surface of Liberia inclines to be hilly or even mountainous at a short distance inland from the coast, the highest mountains being in the northeast.

As most of the numerous rivers have rapids or falls actually at the seacoast or close to it, they are, with the exception of the Cavalla, useless for penetrating far inland. The Cavalla in southeastern Liberia is navigable from the sea for some 80 miles from its mouth and after a long series of rapids is again navigable. Despite this condition, on account of a bad bar at its mouth, the Cavalla does not afford a means of easy penetration into the rich interior of the country.

Generally speaking, means of transport by land are still primitive. In the coast districts, some twenty miles in width, there are stretches of road and wooden bridges built by the government. Over these ox-carts ply between the plantations and villages. Beyond the coast belt all roads narrow into mere footpaths for pack carrying through dense jungle, and during the wet season they become veritable canals. But when a distance of 100 miles or so inland is reached the paths often broaden into good highways, constructed and kept clear of vegetation by the natives of the far interior.

Rubber Trees Indigenous to the Forests

In the main, Liberia is the forest country *par excellence* of West Africa. Outside a coast belt of about 20 miles and the northern steppes of the Mandingo Plateau, the country consists of vast forests, thousands of square miles in extent, except where the natives have cleared the land for cultivation. In many districts where such cleared land has been abandoned it has relapsed into scrub and jungle.

Rubber producers are indigenous to these forests, the number of different trees, shrubs and vines yielding rubber of more or less good quality being variously estimated at sixteen to twenty-two. These belong chiefly to the *Apocynaceous* order, *Funtumia elastica* and *Landolphia owariensis* probably yielding best. The most striking rubber tree of the forest regions is the giant Funtumia, which grows to an altitude of 200 feet, especially in the Nidi forest between the Duobe and Cavalla rivers. Hevea is not a native rubber tree, but soil and climatic conditions have already been proved to be well suited to its cultivation.

Population

One of the great assets of Liberia is its large population. Although there are great areas of uninhabited forest, other sections of the country are densely populated, owing to the wonderful fertility of the soil. The population of American-Liberian origin in the coast regions is estimated at 12,000 to 15,000. To these must be added about 40,000 civilized and Christianized negroes who have become Liberian citizens.

The indigenous native population, apart from the American element, is estimated at about 2,000,000, most of the tribes being handsome, well-proportioned negroes of fine physique, providing a potential labor force for considerable development undertakings as they in turn facilitate the march of civilization. In view of the skill attained in cotton growing by our own negroes of the South, it would seem that under skilled supervision the early prospect of training the civilized Liberian negroes for rubber plantation work is good.

Climate and Rainfall

Liberia is almost everywhere well watered. The climate and rainfall over the whole coast and forest region for about 120 miles inland are equatorial, the rainfall in the western half of the country averaging about 150 inches per annum, in the eastern half about 100 inches, and on the Mandingo Plateau to the north of the forest region not exceeding 60 or 70 inches.

Throughout the coast and forest regions rain falls in every month of the year, but the true rainy season begins in May and ends in November. The dry season is very attenuated, however, and for something like nine months excessive humidity prevails with all its consequences of rust and mould.

The temperature throughout the coast and forest regions is high and fairly uniform, ranging between 75 degrees at night and 100 degrees at noon, occasionally sinking as low as 56 degrees and rising as high as 105 degrees. Extremes of heat and cold are much less during the rainy season, when the highest day tempera-

ture seldom goes above 85 degrees or at night below 75 degrees, and there are long periods when 75 degrees is the scarcely varying temperature of night and day.

The lowest temperatures as well as the highest are recorded in the three dry months between December and March. February is the coolest, driest and most agreeable month of the year. August sometimes offers little to complain of. Although in the middle of the rainy season, there is usually a lull in the rainfall, the weather is distinctly cool and the cloudy sky permits a good deal of exercise without fatigue due to the sun.

The most unhealthful months of the year seem to be September and October, partly no doubt on account of the soaked condition of the land. In most parts of the coast and forest belts September is usually the wettest month. December, although a dry month, is not very healthful after the Harmattan wind sets in with its alternate dry cold and fierce heat.

Winds and Storms

The strong sea breeze which for about eight months of the year blows from the South over the cool Antarctic current materially relieves the heat along the coast, but its effects do not reach far inland. During the months of December, January and February the north wind or Harmattan takes its place. This is a dry wind blowing from the Sahara Desert, sometimes hot and sometimes cold, which parches everything considerably.

Thunder storms occur in most of the months of the dry season from November to May, though very seldom in the height of the rainy season. They are worst in March and April.

The worst season of the year, however, for the surf on the coast is from June to October, when the south wind is blowing strong. The heavy roll which causes the surf, however, is more or less developed according to the state of the tide, being worst at spring tides.

Guayule—a High Grade Rubber

Botanical Source—Occurrence, Yield and Production—Extraction and Preparation—Characteristics of Guayule

THE plant from which guayule rubber is derived was discovered in northern Mexico in 1852 by Dr. J. M. Bigelow, and later described and named *Parthenium Argentatum* by Professor Asa Gray of Harvard. Between that time and 1888 very little attention was given to the plant as a source of rubber.

A series of experiments, financed by American capital in 1902 led in 1904 to the invention by William A. Lawrence of a mechanical method for the extraction of guayule from the shrub, and marks the beginning of the commercial extraction of the gum in Mexico. Two years later this rubber began to be used in quantity and numerous factories started up to produce it.

Occurrence, Yield and Production

The origin of the name guayule is Spanish and Indian signifying "rubber yielder." The plant is a woody shrub of spreading habit, naturally growing much branched. Guayule is distinct from most other rubber producing plants in that its bark contains no latex, rubber being in the cellular tissue of the epidermis and to a small extent in the branches and leaves. The amount of rubber in the topmost branches is very slight, but increases towards the roots.

The yield of marketable rubber from the wild plants varies according to their condition and the method of extraction employed, and will run from 6 to 15 per cent with 12 per cent as average yield of good practice. The original stand of shrub in the field which was milled from 1907 to 1915 has been estimated at approximately 300,000 tons, yielding about 33,000 tons of guayule.

The occurrence of political disturbances in Mexico was responsible for the curtailment of operations from 1914 to 1924. The milling capacity at the present time is not over 50,000 tons of shrub annually. It is reported that the new equipment now being installed will increase milling beginning September 1 to 67,000 tons annually, which will yield 7,400 tons of rubber.

Annual Production of Guayule

Year	Tons	Year	Tons
1911	8,816	1919	1,501
1912	6,356	1920	1,037
1913	4,561	1921	58
1914	658	1922	281
1915	2,594	1923	1,224
1916	1,257	1924	1,345
1917	1,863	1925, partly estimated	5,179
1918	1,329		

Extraction and Preparation

The method of extraction devised by Lawrence provided for crushing the shrub in a roller mill, and the mass was next pulped in a pebble mill to liberate the rubber from the fiber. The pulped material was then soaked in tanks of water which resulted in so water-logging the fiber that it settled to the bottom of the tank while the rubber floated on the surface of the water. The rubber thus roughly separated from fiber was further cleaned by washing in an ordinary two-roll rubber washer. The washed product was shipped practically free of fiber, but containing about 20 per cent of moisture. The rubber delivered in this state to the rubber manufacturer necessitated on his part washing, sheeting and drying before it could be used for compounding.

This expense and inconvenience to the manufacturer has been eliminated by improvements in the methods of extraction and preparation of the gum at the source. The improved current practice differs from the earlier one by the substitution, for the ordinary single batch of pebble mill, of the tube mill with continuous feed and discharge for pulping the ground mixed fiber and gum.

The tube mill is a heavy iron cylinder, commonly from 20 to 30 feet in length, of size chosen to fit the character of the feed and product. They are standard equipment for grinding Portland cement and ores for the flotation process and have proved well adapted for pulping the guayule shrub rapidly and thoroughly, freeing the rubber from the fiber completely.

The improved yield over that given by the smaller pebble mills amounts to at least one per cent of dry rubber. The pulp is also in perfect condition for rapid and complete separation and washing of the gum by flotation in the ordinary Hollander, or paper pulping machine. The gum separated and washed in this way is thoroughly clean and requires only to be sheeted on an ordinary rubber mill preliminary to removal of its moisture in a vacuum dryer. This is done rapidly at a temperature that leaves the rubber unimpaired. In this condition the cooled gum is packed for shipment in new planed wooden cases holding 100 pounds net. The gum, which contains approximately 22 per cent resins and two per cent moisture, reaches the rubber manufacturer in condition ready for immediate use.

Characteristics of Guayule

Dry clean guayule is a soft rubber of about .92 specific gravity. Its softness is due to native resins of low melting point which are present to the amount indicated above. The large resin content also has the effect of lowering the curing quality of the gum and its tensile properties. The resin, however, renders it an excellent softener in rubber mixings.

The addition of 5 to 10 per cent guayule on the rubber of ordinary mixings greatly facilitates the smooth running of stocks on calenders and in tubing machines. The use of guayule in

stocks containing sensitive organic accelerators has the effect of reducing the tendency of the stock to scorch in processing. In the mechanical handling of stocks there is also a notable improvement of frictions by lessening their liability to adhere to liners without lowering the quality of the stock.

Guayule will cure in the presence of litharge, provided a small amount of the proper organic acids is added to compensate their absence in the crude material. Under such circumstances when cured at 40 pounds of steam in a mold it shows a tensile strength of 2,800 pounds per square inch with 810 per cent elongation.

Effect of Accelerators on Guayule

The remarkable maintenance in the tensile properties of pale crêpe or smoked sheet rubber when compounded with various proportions of guayule containing selected ultra accelerators, is shown in the following laboratory tests:

	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9
Pale crêpe or smoked sheets	100	90	80	90	90	90	80	80	80
Guayule	..	10	20	..	..	..	..	..	..
Master A	..	..	..	10	..	..	20	..	..
Master B	..	..	..	..	10	..	..	20	..
Master C	..	..	..	..	..	10	..	..	20
Zinc oxide	5	5	5	5	5	5	5	5	5
Sulphur	4	4	4	4	4	4	4	4	4
D.P.G.	1	1	1	1	1	1	1	1	1

	15 Min. at 40 Lbs.		30 Min. at 40 Lbs.		45 Min. at 40 Lbs.		60 Min. at 40 Lbs.	
	Tensile	Elong. %	Tensile	Elong. %	Tensile	Elong. %	Tensile	Elong. %
A-1	2,860	840	3,530	790	4,050	790	4,280	780
A-2	2,600	850	3,310	790	3,710	785	4,100	750
A-3	2,310	850	3,270	815	3,690	785	4,000	750
A-4	2,600	880	3,440	830	3,950	770	4,100	740
A-5	2,650	880	3,480	815	3,940	770	4,170	740
A-6	2,820	870	3,520	825	4,230	790	4,250	740
A-7	2,430	870	3,380	830	3,680	810	4,040	810
A-8	2,700	880	3,560	780	3,820	780	4,200	760
A-9	3,040	875	3,780	835	4,040	790	4,230	760

The master batches used were composed each of 100 parts guayule in which were added the following proportions of Tuads accelerator; A, 1 ounce; B, 2 ounces, and C, 3 ounces.

It will be noted that a distinct improvement in tensile strength marks each of the three series of tests as the curing time and proportions of accelerator increase.

Compounds A-2, and A-3 containing 10 and 20 per cent of guayule with D. P. G. as accelerator show in the 60-minute cure a fair approximation to the tensile properties of stock A-1, high grade plantation rubber with parallel conditions of acceleration.

Also comparison of the 60-minute cures of A-4, A-5 and A-6 in each of which 10 parts of specially accelerated guayule is added, the results show fully equal to those of the control A-1.

Similarly A-7, A-8 and A-9 containing 20 per cent each of accelerated guayule, show, at the 60-minute cure, tensile results fully equal to those of A-1.

The above tests indicate that it is feasible to use guayule in quantities exceeding those in current practice when appropriate conditions of acceleration and cure are observed without sacrificing the high tensile results associated with the use of straight plantation rubbers of highest quality.

RUBBER PLANTATION AREAS

Investigations carried out by a combined Dutch and British committee have shown that at the end of the year 1920 the amount of land planted to rubber in Java totaled 337,899 acres, the figure rising to 372,426 acres by the end of 1924. Similarly the rubber estimates for Sumatra, Borneo, etc., were 481,903 acres in 1920 and 549,094 at the end of 1924. British plantations however have shown no such increase, the total amount of land planted to rubber in Malaya having been estimated at 2,236,236 acres in 1921, since which time there has been little change. By more recent figures Ceylon has 404,000 planted acres, India and Burma 127,458, and British North Borneo 58,324.

Rubber Trade Inquiries

The inquiries that follow have already been answered; nevertheless they are of interest not only in showing the needs of the trade, but because of the possibility that additional information may be furnished by those who read them. The Editor is therefore glad to have those interested communicate with him.

NUMBER	INQUIRY
644	Manufacturers of sponge rubber.
645	Makers of chair and desk pads.
646	Addresses of manufacturers of machines for dipped goods.
647	Names of firms which handle solid duck diaphragms.
648	Information regarding serial numbering machines.
649	Manufacturers of goods suitable for automobile tops.
650	Firms dealing in uncured reclaimed rubber.
651	Manufacturers of elastic cord.
652	Makers of folding bath tubs.

Foreign Trade Opportunities

Address and information concerning the inquiries listed below will be supplied to our readers through the Foreign Trade Bureau of The India Rubber World, 25 West 45th Street, New York, N. Y.

NUMBER	COUNTRY AND COMMODITY	PURCHASE OR AGENCY
15,616	Mexico—Hospital rubber goods	Purchase and Agency
15,699	Norway—Garters and suspenders	Purchase and Agency
15,751	England—Rubber heels and soles	Purchase or Agency
15,764	Dominican Republic—Tires	Agency
15,774	Japan—Used inner tubes	Purchase
15,776	Canada—Rubber clothing and shoes	Purchase
15,777	Rumania—Rubbers and overshoes	Agency
15,858	India—Tires and tubes	Agency
15,889	Japan—Rubber coated cloth	Purchase and Agency

Foreign Trade Circulars

Special circulars containing foreign rubber trade information are now being published by the Rubber Division, Bureau of Foreign and Domestic Commerce, Washington, D. C. The publications which give details of the rubber industry in some one country are marked with an asterisk.

NUMBER	SPECIAL CIRCULAR
*544	"United States Rubber Import and Boxes Therefor."
*895	"Increased Retail Tire Prices in France."
*896	"Increased Retail Tire Prices in Netherlands."
897	"Tire Exporters' Weekly News Letter."
*898	"United States Exports of Medicated Plasters in 1924."
*901	"Retail Tire Prices in United Kingdom."
*902	"Retail Tire Prices in Dutch East Indies."
906	"Notes on Foreign Rubber Manufactures."
*907	"April Exports of Tires and Tubes from Canada."
910	"Export Trade Notes on Rubber Specialties."
*911	"April French Exports of Rubber Tires."
*912	"April French Exports of Rubber Footwear."
913	"Tire Exporters' Weekly News Letter."
*915	"New Retail Tire Prices in Japan."
916	"Export Trade Notes on Rubberized Clothing."
*917	"Austrian Exports of Rubber Footwear."
*918	"Austrian Exports of Rubberized Piece Goods and Clothing."
*919	"Austrian Exports of Hose and Machinery Belting."
*920	"Austrian Exports of Tires."
921	"Tire Exporters' Weekly News Letter."
*922	"May Imports of Rubber Tires."
*923	"May Imports of Golf Balls."
*925	"Market for Toy Balloons in North of England."
*927	"Canadian Tire Exports for May."
928	"Tire Exporters' Weekly News Letter."
*931	"Retail Tire Price Increase in United Kingdom."

RUBBER IN X-RAY TIMING DEVICE

In his study of tuberculosis, Dr. F. Maurice McPhedran of the Phipps Institute has been using a new device to enable him to get X-ray pictures of the lungs. He found that a loss of detail often occurred due to the motion of the heart and lungs during the period of exposure. Between successive heart beats, the period is too short to make a fully-timed exposure. But, according to *The Electrical Review* quoting *Science*, an electrical engineer at the University of Pennsylvania, Charles N. Weyl, has been able to devise a method to make the exposure in instalments during the intervals between the successive beats of the heart. Over the artery in the patient's neck, a small glass funnel is placed. As the blood rushes through it, the pulse formed causes a slight pressure in a rubber tube and acts on a small sheet of rubber. To this sheet a mirror is attached and a beam of light is reflected, with each pressure, to a photo-electric cell. This current is then amplified by radio vacuum tubes and is used to operate a relay which, in turn, makes the X-ray exposure at the proper moment.

The Water Cure to Date

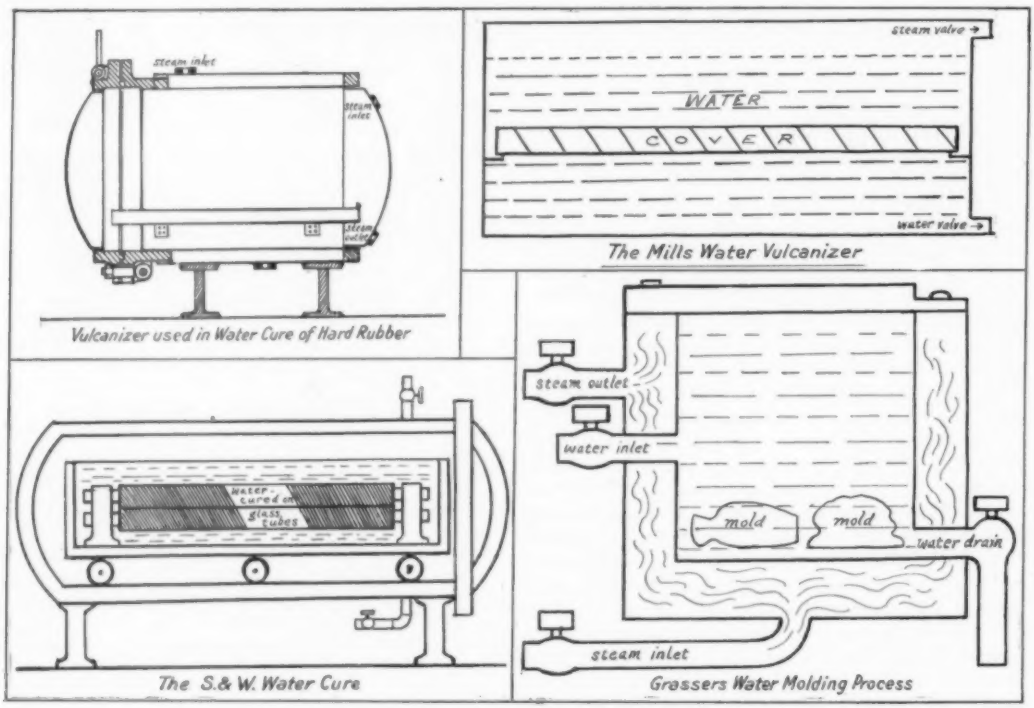
R. E. Bacon

IF interest in the mystery of water curing of rubber goods is a criterion of value, much will be done in the not distant future. As a rule those most interested talk the least. But every rubber man in the Middle West has ideas concerning it, and they run from high praise to open scorn. Nevertheless as nothing is passed up without experiment, the types of goods that have been water cured in laboratory, work shop, and factory cover almost every line of rubber product.

There is also going on a diligent search for water cure patents. As Lauritz A. Laursen is a hydraulic engineer who has been at work on this problem for two or three years, there is a feeling that he may have patents not yet issued or so masked as not to appear to apply to rubber. All of this adds to the mystery and the interest.

The water pressure passes through this opening and expands the tire to the mold. In this expansion, the tire leaves the core. The tire itself forms its own gasket at the top and center of the mold, and the contact at the bead forms the other sealing point, which gives the proper compression at the bead, and also acts as a seal for the water at this point.

So much for the Laursen process, now for others. I should say this matter is from the records of a prominent inventor who was good enough to make the accompanying illustrations as being of at least historic interest. Starting with inner tubes he noted what was called the "S. & W. Process," which consisted in curing inner tubes by rolling the sheeted rubber on heavy glass mandrels. Then, instead of applying the customary cloth wrapping, they were covered with a seamless circular woven cotton jacket. Suspended on



Apparatus Used in Water Curing Rubber Goods

The story of the inner tube water cure has already been told. That was good but the real interest centers about the curing of tire casings in hot water. According to an official of the company with which Mr. Laursen conducted his experiments, this is now being done on a considerable scale and the tires are said to show remarkable wearing qualities. The tire is built upon a collapsible core like any other, but the core is left in the tire. It should be noted that the tire differs slightly in that it has a light fabric strip over each splicing joint on the inner ply of fabric.

The Laursen mold in which it is cured is closed in the center. The water is connected to the back of the mold, instead of through the valve stem at the center, and the mold is so drilled that the water enters through tubing to the center part, and from there through several tubings, which connect from the center of the core to the outer surface of the core.

racks and mounted on a truck, the tubes were rolled into an ordinary horizontal vulcanizer. This was filled with cold water, the vulcanizer head closed, and live steam was turned on until the cure was effected. The goods produced were said to have good quality and fine finish.

In other lines he cited C. Grasser, who obtained British patent No. 2,500, June 16, 1876, for a process of vulcanizing and molding rubber goods by subjecting goods while in molds to hydraulic pressure in a vessel surrounded with steam. Each mold was surrounded with a rubber envelope, and the water under pressure passed through the openings into the interior of the rubber in the mold and pressed it into the cavities before the rubber was vulcanized by the heat. The rubber consisted of pure gum mixed with sulphur, and the molds were of copper, plated first with brass and then with tin to protect the copper from the sulphur.

B. J. B. Mills obtained British patent No. 16,775, December 21, 1886, for a process of curing rubber goods in hot water. His method consisted in coating uncured sheeted rubber with powdered sulphur, placing it for a short time in a dry heater, and then immersing it a reservoir of water. The latter was then covered, the cover having a space around its edges; and the whole was steamed under a pressure of from four to five atmospheres for 30 to 35 minutes. The device used by the inventor is shown in the accompanying illustration.

Customs Appraisers' Decisions

No. 49533.—Protest 31648—G of Louis Wolf & Co. (Boston). Fancy colored rubber balls classified as toys at 70 per cent ad valorem under paragraph 1414, tariff act of 1922, are claimed dutiable under the provisions of paragraph 1402 at 30 per cent.

Opinion by Sullivan, G. A. On the authority of United States *v.* Stewart (12 Ct. Cust. Appls.—: T. D. 40734), the rubber balls in question were held dutiable under paragraph 1402 as claimed.—*Treasury Decisions*. Vol. 47, No. 24, page 45.

No. 49703.—Protest 5083—G of Butler Bros., and protests 4849—G, etc., of B. Illfelder & Co. et al. (New York and Baltimore). Fancy colored rubber balls classified as toys at 70 per cent ad valorem under paragraph 1414, tariff act of 1922, are claimed dutiable at 30 per cent under paragraph 1402.

Opinions by Sullivan, G. A. In accordance with stipulation of counsel and on the authority of United States *v.* Stewart (12 Ct. Cust. Appls. —; T. D. 40734), the rubber balls in question were held dutiable under paragraph 1402 as claimed.—*Treasury Decisions*, Vol. 48, No. 1, page 35.

No. 49704.—Protests 27202—G, etc., of Globe Overseas Corporation et al. (New York). Counsel stipulated that the merchandise consists of rubber novelty sponges. They were classified at 70 per cent ad valorem under paragraph 1414, tariff act of 1922, and are claimed dutiable at 25 per cent under paragraph 1439.

Opinion by Sullivan, G. A. On the authority of United States *v.* Globe Overseas Corporation (13 Ct. Cust. Appls.—; T. D. 40849), affirming G. A. 8867 (T. D. 40424), the rubber sponges in question were held dutiable under paragraph 1439 as claimed.—*Treasury Decisions*. Vol. 48, No. 1, page 36.

Sir Thomas Callender to Visit United States

The recently organized Okonite-Callender Cable Co., Inc., Passaic and Paterson, New Jersey, now operating under the Callender patents, centers interest in the coming visit to the United States of Sir Thomas Callender, one of the pioneers of the British electrical industry, and for many years past managing director of Callender's Cable & Construction Co., Ltd., London, England.

Sir Thomas Callender

Beginning his business career in 1873 at his father's office in London, Sir Thomas became interested in the asphalt paving of streets, while experiments carried forward by himself and his brothers led to the discovery and patenting in 1881 of the insulating product known as vulcanized bitumen. In 1882 a company was formed to manufacture insulated wires and cables and generally develop vulcanized bitumen as an insulator, many of the early underground mains in London and the provinces being laid down during the next few years by the Callender company. With the growth of the electrical industry, it became necessary to reorganize the original business, and in 1898 the present organization, Callender's Cable & Construction Co., Ltd., was formed to take over the old concern. At the present time Sir Thomas is not only on the board of a number of subsidiary organizations formed by his company but is also a director of several of the great power companies of Great Britain.

May Production, Inventory and Shipments of Tires—Crude Rubber and Fabric Consumption

During May shipments of all classes of tires and tubes represented increases as compared with the month previous, and also with May, 1924. All inventories also with the exception of those for balloon casings and balloon inner tubes showed a corresponding decline; a falling-off, as compared with April, being also evident in the May production of pneumatic and fabric casings, and high pressure inner tubes.

Both production and shipments of balloon casings and balloon inner tubes continue steadily to increase. During the first five months of the present year shipments of balloon casings totaled more than 5,000,000, as compared with corresponding shipments for the entire year 1924 of 3,551,325. Production of this class of goods also totaled during the five months' period almost 6,000,000, as against 4,428,074 for the year 1924. Somewhat similar figures might be quoted for balloon inner tubes, where the 1925 advance is even more remarkable. The production in May of pneumatic high pressure casings is estimated at 1,815,969, fabric casings at 480,339, and solid and cushion tires at 75,473.

As compared with the month previous, the May consumption of crude rubber, at 47,639,298 pounds, represented a slight decline, while the May consumption of cotton fabric is estimated at 14,984,561 pounds, as against 14,902,337 pounds for April. The above statistics were compiled from reports rendered by 49 manufacturers of high pressure and balloon casings, 10 manufacturers of solid and cushion tires, and 49 manufacturers of high pressure and balloon inner tubes.

All the following figures compiled by the Rubber Association represent 75 per cent of the industry.

Inventory—Production—Shipments of Pneumatic Casings—Inner Tubes—Solid Tires—Rubber and Fabric Consumption

	High Pressure Pneumatic Casings					
	Cord			Fabric		
1925	Inventory	Production	Total Shipments	Inventory	Production	Total Shipments
January...	3,562,701	1,999,410	1,618,169	1,498,309	1,009,201	908,260
February..	4,108,082	1,996,488	1,458,136	1,710,425	944,168	718,626
March.....	4,369,673	2,000,939	1,708,352	1,836,228	738,625	616,350
April.....	4,035,061	1,816,641	2,012,794	1,700,699	562,449	661,907
May.....	3,610,304	1,815,969	2,266,073	1,461,301	480,339	714,728

	Balloon Casings			Solid and Cushion Tires		
1925	Inventory	Production	Total Shipments	Inventory	Production	Total Shipments
January...	901,031	546,146	563,315	196,774	52,464	44,814
February..	877,851	740,106	764,874	191,733	53,058	55,646
March.....	926,303	1,217,367	1,168,277	175,010	56,751	69,833
April.....	1,080,594	1,626,369	1,448,974	166,389	66,059	70,950
May.....	1,386,840	1,803,607	1,484,877	156,175	75,473	86,785

	High Pressure Inner Tubes			Balloon Inner Tubes		
1925	Inventory	Production	Total Shipments	Inventory	Production	Total Shipments
January...	7,756,467	4,171,812	3,643,841	920,728	585,243	528,533
February..	8,815,514	3,977,721	2,989,606	951,539	776,855	738,734
March.....	9,540,993	3,895,688	3,170,624	1,135,649	1,354,434	1,162,910
April.....	8,726,603	3,259,524	3,556,258	1,486,546	1,879,007	1,471,976
May.....	7,535,418	3,225,218	4,513,460	1,840,425	1,908,973	1,516,774

	Cotton and Rubber Consumption in casings, tubes, solid and cushion tires	
1925	Cotton Fabric Pounds	Crude Rubber Pounds
January	12,310,822	42,170,869
February	13,363,986	41,720,847
March	15,040,609	46,365,630
April	14,902,337	48,154,633
May	14,984,561	47,639,298

What the Rubber Chemists Are Doing

A Symposium on the Bierer-Davis Oxygen Aging Test[1]

Further Developments and Applications

By J. M. Bierer and C. C. Davis

THE present paper is limited to a general survey of results which can be obtained with the test, and the quantitative manner in which natural aging may be duplicated. Systematic investigations have dealt with the influence on aging of various accelerators, numerous antioxidants, different types of rubbers, reclaimed rubber, softeners such as oils and asphalts, and general ingredients, beneficial and harmful.

Among the stocks for which a large amount of data under various conditions of cure are available, one stock vulcanized with diphenylguanidine and one vulcanized with litharge show the relation between natural aging and oxidation in the bomb. These two stocks are as follows:

Smoked sheets	100.0	Smoked sheets	100.0
Sulphur	4.0	Sulphur	6.0
Diphenylguanidine	0.5	Litharge	10.0
Zinc oxide	4.0	Precipitated whiting	50.0
Precipitated whiting	50.0		
Cure 30 min. at 142° C.		Cure 25 min. at 142° C.	

The results after oxidation under 300 pounds per square inch pressure of oxygen at 60 degrees C. show that the litharge stock deteriorated badly before the diphenylguanidine stock changed to any great extent.

Ultra-Accelerator Stock

A representative compound of a different character, vulcanized with an ultra-accelerator, is as follows:

Smoked sheets	100.0	Tetramethylthiuram-disulphide	1.0
Sulphur	1.0	Zinc oxide	100.0
		Press cure 10 min. at 134° C.	

The bomb tests and natural aging in the dark over a period of five years closely parallel one another, about nine hours under 300 pounds per square inch pressure of oxygen at 60 degrees C. being equivalent to one year of natural aging in the dark.

High Grade Carbon Black Stock

Following is a highly accelerated carbon black stock closely resembling tire tread and similar stocks compounded for high abrasive resistance. Its bomb and oven tests were made over a long range of cures and show the deterioration as a function of the cure. About nine hours at 300 pounds per square inch pressure of oxygen at 60 degrees C. showed equivalent to one year of natural aging in the dark.

Smoked sheets	60.000	Pine tar	1.000
Sulphur	3.000	Zinc oxide	17.125
Diphenylguanidine	0.500	Carbon black	18.000
Ethylideneaniline	0.375		
			100.000

Fire Hose Tube

Fire hose compound of the older type cured with litharge was tested when first vulcanized both before and after oxidation at 300 pounds per square inch pressure of oxygen at 60 degrees C. for increasing periods of time. The quality of the stock after oxidation for 18 hours under 300 pounds per square inch pressure of oxygen at 60 degrees C. is practically the same as that after two years of natural aging.

Stocks Cured with Sulphur Chloride

Six different bathing cap stocks when submitted to 300 pounds of oxygen at 60 degrees C. for 24 hours could be divided into four good and two bad stocks. The stocks which deteriorated so badly in the bomb were the same which did not age well under normal conditions. These tests are of particular significance because ordinary tests failed as with nearly all cold-cured compounds, to differentiate between good and bad natural aging.

Discrepancies found in the stress-strain curves may be accounted for by the fact that as deterioration advances the outer strata of the rubber become of poorer quality than the interior. This is particularly true if test pieces are oxidized in the bomb. Natural aging is carried out with large uncut sections. Oxidation in the bomb involves deterioration on all four surfaces of the cross-section, compared with two surfaces out of four in the case of test pieces cut after the rubber has aged naturally. This difference increases with decrease in width and thickness of the test pieces.

Increased Rate of Deterioration

There is a temperature range, differing for each stock, above which stocks become disproportionately sensitive to oxidation. This is probably not chiefly a heat effect. It is of significance that in the original experiments this break in the aging curve also occurred after a definite period of time at a given temperature and concentration of oxygen. The phenomenon has since been found with many other stocks and is probably a general characteristic of vulcanized stocks. For a fairly complete indication of the aging of a rubber compound it is therefore necessary to carry the oxygen aging test to the point where the rate of deterioration increases decidedly, measured by the changes in any of several physical or chemical properties. Only by this method can a true criterion of the aging be obtained.

Relation Between Bomb and Natural Aging

About ten hours in the bomb under 300 pounds per square inch pressure of oxygen at 60 degrees C. causes deterioration to the same degree and of the same character as one year of natural aging. This same relation between the time in the bomb and of natural aging holds true for any length of time.

The value of any aging test may be expressed by the curvature and approach to coincidence of curves representing various properties of the stock. It may include changes in physical properties such as tensile strength, ultimate elongation, and resilient energy, or changes in chemical properties shown by the acetone extract and the formation of oxidation products. In all cases duplication of natural aging means straight lines which coincide throughout.

Aging in Light and in Darkness

Rubber boots and shoes exposed to light deteriorate faster and crack much sooner than when stored in the dark. Likewise automobile topping in ordinary use has a much shorter life than it would if it were stored indoors in darkness. To duplicate these conditions exactly requires a test which combines the action of light, heat and oxygen, the relative intensity of which would have to be chosen to agree with the particular conditions encountered in natural aging.

It would seem that all that can be hoped for, is to standardize the test so that it represents the equivalent of ordinary storage of shelf aging conditions. Thus to assert that a stock shows little change after 48 hours "in the bomb" would instantly convey the perfectly definite information that it will remain in good shape for five years or so under natural conditions in the dark.

Standard Test

We have become convinced, after accumulating considerable evidence and finding no discrepancies between the bomb test and natural aging, that a combination of 300 pounds per square inch pressure of oxygen at 60 degrees C. is very effective in obtaining

[1] A symposium held on April 10, 1925, before the Rubber Division of the American Chemical Society at the Baltimore Meeting. Courtesy of *Industrial & Engineering Chemistry*.

a deterioration in the bomb similar to several years of natural aging.

Between nine and ten hours is the equivalent of one year of natural aging, at least for compounded stocks. Whether this ratio holds good for certain pure gum stocks there are fewer data by which to judge. Pure gum stocks transmit more light than compounded stocks and the fact that stocks containing little or no pigments or fillers have the reputation of deteriorating faster than compounded stocks may be due to this fact. The effect of light is probably still more intense a factor in the case of pure gum stocks.

Control of Temperature

Whatever the procedure which is adopted, great attention must be paid to the accurate control of temperature. Experiments have shown that a fluctuation of two or three degrees above or below that prescribed for the test results in considerable differences in the degree of deterioration after bomb tests corresponding to a few years of natural aging. The bomb tests involve chemical reactions and if the temperature varies more than an amount corresponding to a five per cent change in the rate of the reaction, the results of the test will be in error by some similar amount. To maintain an accuracy of 5 per cent, the temperature must vary not over one-half degree above or below 60 degrees C.

Compounds With and Without Antioxidants

By H. A. Winkelmann

A series of compounds with and without antioxidants were aged in direct sunlight from June to October, 1924. The samples were exposed to the south at an angle of 45 degrees. The aging of these compounds was also followed in the Geer aging method. The compounds which gave the best results by the Geer aging method also gave the best aging in sunlight.

A study of the stress-strain curves taken every two weeks on the compounds exposed to direct sunlight showed that the addition of an antioxidant has a very beneficial effect in maintaining the original tensile strength, but in nearly every case there was a regular increase in the stiffness of the stress-strain curve. The rubber compounds without an antioxidant decreased in tensile strength without any material change in the stress-strain curve. Antioxidants therefore aid in preserving the original tensile strength but the stress-strain curve changes materially.

The Bierer-Davis Oxygen Aging Test

By W. E. Glancy

Not all of the results obtained in using this bomb are consistent with known facts of natural aging and with Geer oven tests which have been checked with life agings previously. Generally speaking, we have found that stocks of high quality such as are used for tire treads, inner tubes, reducing corsets, etc., which give good aging qualities as shown in the Geer oven test will also show good aging qualities in the oxygen bomb. We have also prepared inner tube stocks which would not age properly in the Geer test and have found that these stocks also aged poorly in the oxygen bomb.

	Tensile Strengths in Pounds per Square Inch		
Type of Stock	Original	After Geer Test	After Oxygen Test
Carbon black tread	3,350	3,350	3,150
Good aging tube	2,200	2,200	2,100
Poor aging tube	1,850	950	850

The stocks in the Geer test were held 6 days at 71 degrees C. and in the oxygen test 16 hours at 60 degrees C. with a pressure of 300 pounds per square inch. A comparison of a large number of stocks aged artificially by these two methods showed an average drop in tensile strength by the Geer test of approximately 10 per cent and by the oxygen test of approximately 20 per cent. The oxygen test can be used to determine the correct cure very readily and with greater accuracy than has hitherto been possible. However, we feel that the results obtained tend to exaggerate the conditions which will be found in natural aging.

Our opinion with regard to these tests is that some stocks age more rapidly because of their easier susceptibility to oxidation. Other stocks are not so easily oxidized but tend to get "drier" and harder from other reasons. We believe that the oxygen aging test is going to be most valuable when used for stocks of low-sulphur content and of relatively poor quality but that further time will be required before it is possible to judge its true value for most high quality stocks.

A Few Observations on the Oxygen Aging Test

By W. W. Vogt

The present paper deals exclusively with high grade tire stocks, and presents the behavior of this type of stock when subjected to natural aging, to the Geer oven test and to the Bierer-Davis bomb test.

Natural Aging

The test sheets were hung in a cabinet, which was substantially light tight, in such a manner that there was a liberal clearance between the sheets. The average temperature was 24-30 degrees C. (75-85 degrees F.)

Geer Oven Test

The test sheets were placed in a large electrically heated and controlled oven supplied with fresh air and maintained at 70—0.5 degrees C. (158—1 degrees F.). The test strips were died out after aging and tested after 24 hours.

Bierer-Davis Bomb Test

The test strips, weighing about 5 gms. each (for pure gum stocks), were placed in a bomb having a capacity of 1,200 c.c. Ordinarily about 30 strips were aged at one time. The bomb was heated by means of an electrically heated and controlled water-filled thermostat where a temperature of 60 degrees—0.1 degrees C. (140—0.2 degrees F.) was maintained. The test was carried out under a pressure of oxygen of 400 pounds per square inch (about 28 atmospheres). The strips were tested 24 hours after removal from the bomb.

Below are given the results of the best cure only on six representative tire stocks, with a comparison of the three aging tests. The data for the natural and oven tests were obtained on the same stocks, whereas the stocks for the bomb test were compounded and cured about two years later. However, the resulting stocks gave original physical properties which checked closely with those of the stocks on which natural and oven tests were made. The data are recorded as percentage of the original tensile product, because it is believed that the tensile product takes into account the changes in tensile and elongation, both of which are of significance.

	Percentage of the Original Tensile Product					Number of Months of Natural Aging for Deterioration Equivalent to the Oven or Bomb Test	
	After Natural aging at 75-85° F. in the dark		After Oven Test at 70° C.		After Bomb Test 16 Hours at 60° C.	1 Day in the Oven at 70° C.	16 Hours in the Bomb at 60° C.
Stock No.—	6 Mos.	12 Mos.	3 Days	6 Days			
394 (Coat)	86	72	86	69	78	3.3	13
452 (Breaker)	92	78	100	79	65	3.0	27
479 (Coat)	87	74	86	78	90	2.5	6
532 (Sidewall)	86	80	92	78	74	4.5	22
495 (Tread)	68	41	49	28	71	3.7	6
498 (Tread)	91	71	67	37	78	6.7	13
					Average	4.0	14.5

The effect of antioxidants can be demonstrated with about equal certainty by the bomb or oven test. On stocks compounded with various fillers the bomb and oven tests give substantially parallel results.

Oxygen Aging Test in Factory Control of Stocks

By John D. Morron and Harold E. Webster

Tests of a large number of factory stocks show that the Bierer-Davis oxygen aging test checks actual life aging and is very valuable as a means of factory control of stocks because of the small amount of time needed to obtain results. This method of testing has been tried up to the present time on a hundred or more different stocks. In most cases, poor aging stocks are not due to improper ingredients, but to the wrong cure.

As is well known, certain ingredients have a harmful effect, such as potassium permanganate which was tested by Bierer and Davis. Among other ingredients, Prussian blue is known to have bad aging properties. Because the bad aging of this material is so well known, it is interesting to see how easily its action is shown by the oxygen aging test, since a great many of the so-called chrome greens on the market contain more or less of this material.

The biggest value of the oxygen aging test seems to be that it affords an exceedingly valuable means of determining the proper cure of stocks. Another big advantage with oxygen aging is to determine the ability of a stock to resist excessive working or to inform us when the stock has been overworked.

Most rubber manufacturers have certain products in which the percentage of returned raw scrap is high, and any method of rapidly determining when the stock has been overworked is of value. The tests before milling may show no very alarming differences in quality of the stock, but after oxygen aging, deterioration is very noticeable. This undoubtedly explains a great many stock troubles which arise from time to time and gives a means of checking the difficulty.

The oxygen aging test affords an excellent method of determining:—(1) The proper compounding materials; (2) The presence of impurities in compounding materials; (3) The correct cure; (4) Whether the stock has been overworked.

While it may be possible to determine some of these factors successfully on high grade stocks by means of the heat aging test, as far as our experience goes, and in accordance with the general opinion, it is not possible to rely on the heat test for low grade stocks. This is now perfectly possible with the oxygen aging test. Moreover the heat aging test, which takes two weeks to complete, is eliminated in many cases on account of the time required. Now we have a ready means by which every night we can determine whether our work is progressing satisfactorily.

Combustion Method for the Oxidation of Rubber

By Webster N. Jones

The method employed was to pass dry oxygen over a weighed sample of rubber maintained at a constant temperature. The oxygen was passed at the rate of approximately 0.5 liter per hour through a drying train consisting of a potassium hydroxide solution, a tower filled with soda-lime and a tower filled with calcium chloride. The reaction chamber was a specially constructed U-tube of pyrex glass of 35 cc. capacity, with side arms extending at right angles on the same side of the tube. The tube was heated in an oil bath in an automatically controlled electric oven and the oil was stirred with an electric stirrer. The arms of the U-tube extended through holes in the side of the oven. One arm was attached to the drying train, the other arm was connected to a series of three Fisher absorption bottles in which the products of oxidation were collected. The first Fisher bottle contained calcium chloride, the second, ascarite, and the third, calcium chloride. Some organic decomposition products were formed during the oxidation. A small amount of reddish oil generally collected in the arm of the U-tube and in the first calcium chloride bottle. It had the odor of oxidized rubber and gave the pyrrole test for levulinic aldehyde.

The increase in weight of sample, of the calcium chloride bottle and of the ascarite bottle were obtained at different intervals of time and at different temperatures of the oven. The increases in weight were plotted against time. There was an induction period during which the rate of oxidation was slow. After the reaction once started it proceeded rapidly. Pure rubber oxidized very rapidly and the rate of oxidation was retarded by the addition of antioxidants. Compounded rubbers which showed the best aging in the low temperature combustion method also showed the best aging in the Geer oven.

Remarks on the Bierer-Davis Aging Test

By Hugh L. Thomson

When it is considered that the ability of a few pounds of rubber to age well is vital to the successful performance of a piano which costs several thousand dollars, the desirability of advance assurance for every lot of material is self-evident. Our results with the Bierer-Davis aging test have been most encouraging.

The Aeolian company has accurate data on the "expectation of life" of certain grades of rubber compounds, and the oxygen aging test apparently checks these results in all cases. It is surely of immense value in comparing one material with another. At the present time we consider 12 hours' exposure in the bomb under 300 pounds per square inch pressure of oxygen at 60 degrees C. to be equivalent to one year in darkness under the conditions prevailing in the piano.

In our tests compounded rubber materials always last longer than so-called "pure gum" products. Furthermore the equivalent time of 12 hours in the bomb and one year of aging under ordinary exposure is not correct when the material is exposed to light of any intensity. For this reason we have started experiments with a quartz bomb in the hope of checking more accurately the effect of light in addition to that of oxygen.

Aging Goods in Oxygen at Atmospheric Pressure

By A. A. Somerville

Instead of using oxygen under pressure in a bomb according to the method of Bierer and Davis, which is now being used by so many companies, Marzetti at the Pirelli Laboratories has obtained similar results by using pure oxygen at atmospheric pressure. This necessitates a longer time to obtain the same deterioration, and for this reason a little higher temperature is used than that commonly used in the Bierer-Davis test where the oxygen is under high pressure.

The work of Marzetti and Bruni with this method has led to certain general and very interesting conclusions. The most important of these are that aging is essentially an ordinary oxidation due to a reaction of the rubber with atmospheric oxygen and that rubber compounds deteriorate at a rate which is proportional to the rate at which they absorb oxygen. To reach an advanced physical state of deterioration, only about one per cent of oxygen based on the rubber is absorbed and the differing resistance to oxidation of different rubber compounds is manifest, not in the amount of oxygen absorbed but in the rate at which it is absorbed.

Bruni and Marzetti have found also that the degree of cure has a great influence on this rate of absorption of oxygen and that rubber compounds which deteriorate rapidly in natural aging because of overcure absorb oxygen rapidly in their test and deteriorate correspondingly rapidly. This is of great practical utility as a means of foreseeing the aging of compounds and adjusting cures.

Besides the extent to which the stock is cured, the quality of the crude rubber is of influence on the aging. Thus a slow poorly curing rubber takes up oxygen faster than a first grade plantation rubber and deteriorates correspondingly faster.

When organic accelerators are used to obtain good cures in shorter times, the rate of absorption of oxygen is greatly decreased and the aging is greatly improved. In this connection it is the opinion of Bruni that the proper use of organic accelerators improves the aging qualities of rubber compounds so enormously

that such accessory agents as antioxidants are usually unnecessary. Furthermore antioxidants are for the most part retarders of vulcanization and accordingly tend to defeat their own purpose in that the rubber must be cured longer.

June Meeting of A.S.T.M.

The Twenty-eighth Annual Meeting of the American Society for Testing Materials was held at Atlantic City, New Jersey, June 23-26, 1925. The following reports of interest to the rubber industry were made by the various committees. During the past year four new sub-committees were organized as follows: Narrow Fabrics; Rope and Cordage; Rayon (Artificial Silks), and Asbestos Textiles.

COMMITTEE D-11: F. M. FARMER, CHAIRMAN; E. H. GRAFTON, SECRETARY. There is little need for additional standards because the principal engineering applications for rubber products have already been reasonably well provided for. The principal activity of the committee is, and probably will continue to be, the development of performance tests. A great deal of research work is actively under way by a sub-committee under the chairmanship of C. R. Boggs and definite progress is being made, particularly in the development of the following four types of test which the committee believes are the most important and should therefore receive first consideration:

1. ABRASION TEST. This is being developed for general application to those rubber products where abrasion in service is the most important element in determining the life of the material, such as conveyor belting, automobile tires, rubber-covered air and water hose, rubber heels, etc.

2. ACCELERATED AGING OR LIFE TEST. This is applicable to all rubber products since all such materials suffer natural deterioration with time, whether in service or in storage. An accelerated test which will show, in a relatively short time, the rate of deterioration which would naturally take place over a period of months or years due only to exposure to normal atmospheric conditions, is obviously a very important one. Two such types of test have been developed, one the Geer test, which has been in use for a number of years, and the other, the Bierer-Davis oxidation test, which is a recent development. A number of laboratories represented on the committee are making comparative tests on various types of rubber compounds with these two methods in conjunction with specimens of the same samples subjected to natural aging. The committee feels that it will have during the next year ample direct experimental evidence to justify recommending a definite accelerated life testing procedure. The next step would be the establishment of limits for various products.

3. FLEXING TEST FOR BELTING. This test is obviously intended for specific application to rubber belting. The committee has developed a special machine for testing samples of belting relatively quickly under conditions which involve those deteriorating influences which are encountered in actual service. A series of tests will be made in several laboratories with this machine. There will also be some opportunity to correlate the results of these tests with actual service experience. It is expected that it will be possible to definitely predict the approximate life of belts in service from this empirical test and that therefore limits can be determined for inclusion in the specification for rubber belting.

4. OIL AND GASOLINE TEST. This is also a specific test for rubber hose to be used in conveying oil and gasoline. The subcommittee dealing with this matter has collected considerable information, but is not yet prepared to make a definite recommendation.

COMMITTEE D-9: F. M. FARMER, CHAIRMAN; H. S. VASSAR, SECRETARY. A new tentative method, Testing Laminated Sheet Insulating Material, was proposed, also recommendations for changes in methods of testing molded insulation, insulating varnishes, cable splicing and pothead compounds, and untreated insulating paper.

COMMITTEE D-13: W. F. EDWARDS, CHAIRMAN; R. T. FISHER, VICE-CHAIRMAN; K. B. COOK, SECRETARY. The committee submitted to the society three new tentative standards: Tolerances for Numbered Duck; Tolerances and Test Methods for Knit Goods, and Methods of Testing Grease Wool and Allied Fibers for Scoured Content.

Five tentative standards were recommended to be advanced to standard. These were: (1) Tolerances for Hose Ducks and Belt Ducks; (2) Tolerances and Test Methods for Electrical Cotton Yarns; (3) Imperfections and Tolerances for Square-Woven Tire Fabrics; (4) Imperfections and Tolerances for Cord Tire Fabrics; (5) Specifications and Tests for Osnaburg Cement Sacks.

Certain revisions were recommended in three other tentative standards, namely, Imperfections and Tolerances for Square Woven Tire Fabrics; Imperfections and Tolerances for Cord Tire Fabrics, and Tests for Osnaburg Cement Bags.

Chemical Patents

The United States

COLLOIDAL SULPHUR AND LATEX. The introduction of sulphur in colloidal form into a natural latex, and subsequently vulcanizing.—C. C. Loomis, Yonkers, N. Y., and H. E. Stump, Brooklyn, N. Y., assignors to Hevea Corporation, New York. United States patent No. 1,543,932.

CHLORINATED RUBBER PROCESS AND PRODUCTS.—Carleton Ellis, Montclair, New Jersey, assignor to Chadeloid Chemical Co., New York. United States patents Nos. 1,544,529; 1,544,530; 1,544,532; 1,544,533.

CHLORINATED RUBBER, PROCESS AND PRODUCTS.—Carleton Ellis and Norris Boehmer, Montclair, New Jersey, assignors to Chadeloid Chemical Co., New York. United States patents Nos. 1,544,531; 1,544,534, and 1,544,535.

VULCANIZING RUBBER. Accelerator.—Lorin B. Sebrell and C. W. Bedford, assignors to The Goodyear Tire & Rubber Co., all of Akron, Ohio. United States patent Nos. 1,544,687, and 1,544,688.

CURING RUBBER. The method of treating rubber which comprises employing an inorganic oxide gel as a carrying agent for compounding fluids.—R. B. Stringfield, assignor to The Goodyear Tire & Rubber Co., both of Akron, Ohio. United States patent No. 1,544,699.

COMPOSITION OF MATTER. A thoroughly mixed elastic adhesive rubber composition containing colloidal materials.—T. Meyer and J. K. Montgomery, Philadelphia. Said Montgomery assignor to said Meyer. United States patent No. 1,545,005.

The Dominion of Canada

HALOGENATING LATEX. Process which comprises forming a homogeneous mixture of approximately equal parts of latex and a filler, drying the mixture and chlorinating it until approximately a 20-24 per cent increase in weight is obtained.—Ernest Hopkinson, New York, N. Y. Canadian patent No. 250,476.

RUBBER FOOTWEAR COMPOSITION. A rubber composition containing between 50 and 100 parts by weight of finely divided carbon black to each 100 parts by weight of crude rubber in the compound.—W. B. Wiegand, Montreal, Canada. Canadian patent No. 250,918.

The United Kingdom

RUBBER COMPOSITION. An oxide or sulphide of lead, antimony, magnesium or zinc, or mixtures of these, and sulphur are added to latex, and the mixture is coagulated by stirring or agitation alone. The coagulum is removed from the serum and is made directly into tiles, mats, floor coverings, boot soles, leather substitutes, etc.—A. Jeffrey and B. Wilkinson, Sitiawan, Perak, Malay States. British patent No. 230,015.

TREATING LATEX. A spongy, non-adhesive composition suitable for use in rubber mixings is made by mixing heated latex with a heated aqueous solution of glue, gelatine, etc., and adding a coagulant for the latex and a hardener for the glue, etc.—R. Russell, Yaldergate, Beechwood, Heaton Park, Manchester, and H. Broomfield, 23 Davenport Road, Hazel Grove, Stockport, Cheshire. British patent No. 231,988.

PLASTIC COMPOSITION. A small proportion of an aqueous emulsion of rubber latex is added to casein which is then worked up in the usual way.—British Xylonite Co., Ltd., and W. H. Simmons, Hale End, Essex, British patent No. 232,011.

ARTIFICIAL RESINS. Phenyl-aldehyde condensation product for molded articles.—H. E. Potts, 12 Church street, Liverpool. (Canadian Electro Products Co., Ltd., 83 Craig street, Montreal, Canada.) British patent No. 232,277.

FELTED MATERIALS. A bat of smooth, non-felting fibers such as cotton, etc., is impregnated during or after manufacture with rubber latex under conditions precluding coagulation, and the product is dried and may be subsequently vulcanized with or without pressure.—S. G. S. Dicker, 20 Holborn, London. (Rubber Latex Research Corporation, 185 Devonshire Street, Boston, Massachusetts.) British patent No. 232,763.

RUBBER DISPERSIONS. W. B. Pratt, 28 Pine Street, Wellesley Hills, Massachusetts. British patent No. 233,370.

VULCANIZING PROCESS. Seamless articles are made by dipping a form into latex which has been artificially concentrated, allowing the water content to evaporate and vulcanizing the product.—G. Venosta, 31 Corso Magenta, Milan, Italy. British patent No. 233,458.

Germany

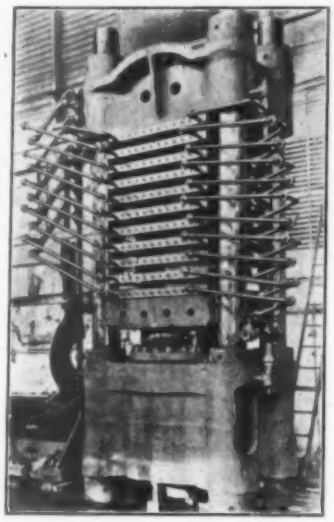
414,930 (February 27, 1924). Method of concentrating rubber latex. Dr. J. Traube, Schlesztrasse 29, Charlottenburg.

415,871 (April 16, 1922). Method of preparing dehydrated rubber. Dr. Hermann Staudinger, Zurich, Switzerland. Representative: Dr. C. Schmidtlein, Berlin S. W. 11.

New Machines and Appliances

Heavy Hydraulic Molding Press

HEAVY hydraulic molding presses with rolled steel steam plates can be used for curing a large variety of rubber goods where rapid heating and cooling of the press plates are necessary, as in molding many articles in rubber, bakelite, mica-fiber and other composite materials.



Southwark 2,100-Ton Vulcanizing Press

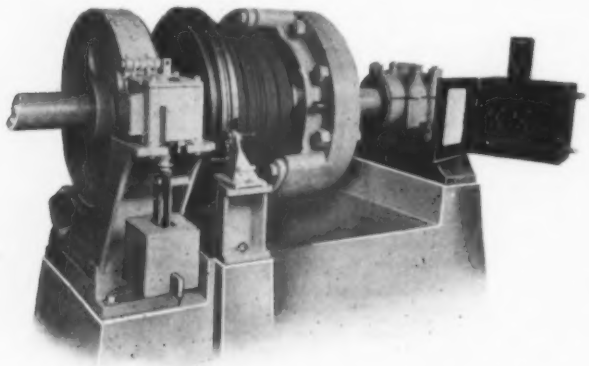
The use of rolled steel steam platens permits a larger number of openings or curing decks than cast platens, and thus increasing press capacity to the limit.

The press here illustrated is equipped between plates with an unique system of steam connections known as Flexo joints. The feature of this connection is that it is tightened by a screw type stuffing box instead of a two bolt gland.

When fitted with these joints the press is very complete particularly if the molds used are to be entered from the front only, because all separate manifolds are eliminated, thus saving extra expense and floor space.—Southwark Foundry & Machine Co., Philadelphia, Pennsylvania.

Electric Safety Coupling and Brake

At the heads of line shafts between the prime mover and the shaft where there is no quick stop either on the prime mover or on individual mill, the coil friction clutch coupling and brake



Farrel Coil Friction Clutch Coupling and Brake

here illustrated are used. Both clutch and brake are under electric control which is wired to the safety switch at each machine and additional safety stop buttons are located where desired.

The electric current is transmitted through the brushes to a magnetic ring which, in turn, engages the tail of the driving coil of the clutch when the current is applied. The solenoid which supports the brake weight when the clutch is engaged is connected in series with the clutch control so that when the current is interrupted the clutch and brake solenoid are simultaneously released and the powerful band brake is instantly applied.—Farrel Foundry & Machine Co., Ansonia, Connecticut.

Removal of Scale from Rubber Molds

The hard, baked sulphur and soapstone scale that accumulates on the polished surfaces of rubber molds is a source of trouble and expense to the manufacturer. The presence of scale on tire molds is particularly serious, for it will sometimes transfer to the surface of the finished tire, causing it to become a second. Also, the presence of mold scale prevents the goods from receiving a highly finished surface.

Various expedients are in use for the removal of mold scale, some of which are quite effective. In the case of tire molds with their deeply cut anti-skid treads and lettering, scale removal without damage to the mold is particularly difficult.

One of the best methods for scale removal is to loosen it by application of strong heat and then detach it by brushing. The equipment here pictured has been designed to apply this method to tire molds which cannot be heated properly in any other way. It consists of a cast iron lead melting pot 5 feet in diameter of

Laclede System for Cleaning Tire Molds

capacity to hold 10,000 pounds of metal, although but 6,000 pounds are used in service. The furnace which supports the lead pot is arranged with burners designed to burn gas at 5 to 6 pounds pressure, consuming about 2,700 cubic feet of gas to melt 6,000 pounds of lead and raise its temperature to 700-750 degrees F. in 1¼ hours.

Steel or iron molds being of lighter specific gravity than lead will float upon the molten lead and speedily acquire its temperature. At the heats mentioned the difference of expansion between the mold and the scale is sufficient to loosen the scale which can then be detached and removed by brushing, leaving the original surface of the mold clean and unharmed.—Laclede Gas Light Co., Industrial Department, St. Louis, Missouri.

Instrument for Determining Rubber Density

Testing the density or hardness of vulcanized rubber may be done very conveniently by the pocket instrument here illustrated. In use a small ball shaped point is pressed against the rubber surface under test until the ball point penetrates so that the flat surface of the tool rests on the rubber. The dial reading shows the number of 50ths of a millimeter of penetration and this is called the density. By doubling the densimeter reading one can obtain the plasticity as given by the standard plastometer.—Stowe & Woodward Co., Newton Upper Falls, Massachusetts.

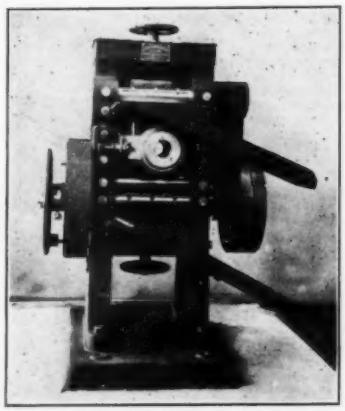
Adams' Densimeter

Arguto Oilless Bearings

Oilless bearings and bushings for light shafting and loose pulleys are made of wood by a patented process of chemical treatment which obviates entirely all need of lubrication. They run indefinitely for years, it is said, without the use of oils, grease, graphite, etc. All they need is to be let alone.—Arguto Oilless Bearing Co., Wayne Junction, Philadelphia, Pennsylvania.

Lead Sheath Stripping Machine

A new model lead sheath stripping machine is here pictured. It embodies developments and improvements introduced to keep pace with the requirements of advance practice in the production of molded hose, insulated wire and cables. The improvements afford quick and positive adjustment for various thicknesses of lead, and changes to accommodate various diameters of lead covering can be made with less effort and in a third the time formerly required. The range of the machine is from ½ to 4 inches diameter of lead covering.



Robertson New Type Lead Stripper

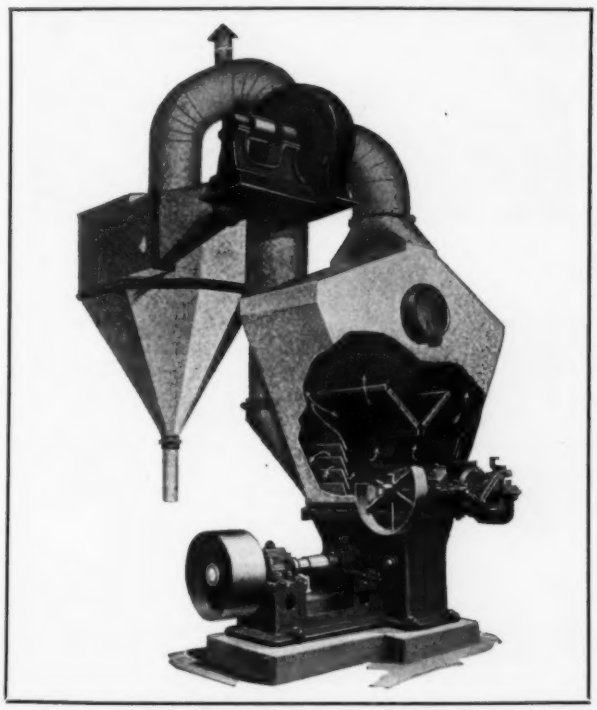
The machine receives the lead covered hose or wire as it comes from the vulcanizer, and, as it passes through the guide bushing, two horizontal splitting knives cut almost through the lead covering dividing it into upper and lower strips until about 18 inches has been split in this manner. Then each strip is turned backward by hand and entered respectively into the upper and lower pairs of corrugated stripping rollers. A hand wheel and clutch is used when starting the strips through the machine in this manner. When power is applied, the two lead strips are peeled backward by the corrugated rollers, pass through cutting rollers and are cut into short lengths convenient for remelting. The lead as it leaves the cutting rollers is discharged through metal chutes which direct it either to a conveyor or to a receptacle on the floor. This machine on smaller hose or electrical conductors will operate at 100 feet per minute, but on ⅝ and ¾ inch garden hose the usual speed is 60 feet per minute.—John Robertson Co., 121 Water street, Brooklyn, N. Y.

Improved System of Grinding Hard Rubber Dust

The essential features of a new system developed for grinding hard rubber dust economically and with maximum safety are here described and illustrated. The system eliminates fire and explosion hazard, produces more uniformly fine dust, avoids discomfort to the workmen, and greatly reduces the cost of hard rubber dust.

This improved process employs a high speed mill having rolls adapted to act upon the hard rubber under their own centrifugal force, and apparatus connected with the mill for progressive separation and collection of dust, all operations being conducted in a closed circuit of inert gas at uniform temperature.

Devices are provided for collecting the dust from the current of inert gas by which it is carried from the mill in the closed circuit. The pressure of the inert gas within the mill and conduits



Bonnot Hard Rubber Dust Grinder

can be maintained slightly higher than atmospheric pressure to avoid the formation of an explosive mixture by leakage of air into the system. The operation is continuous and automatic throughout, the operator being required only to remove the finished product, and as the system is substantially closed throughout, objectionable dust in the atmosphere is avoided.

Hard rubber dust is produced by this system at a cost of less than a fifth of that produced by grinding with refiners, and there is no loss of dust.—Paul A. Frank, Akron, Ohio, Agent for The Bonnot Co., Canton, Ohio.

Alining Pillow Block

In this pillow block is incorporated the maximum alining type "Rollway" bearing having a taper bore with an adapter sleeve, making it suitable for use with standard shafting. The design of the pillow block is such that maximum strength is combined with compactness and makes it adaptable for service where it is necessary to get horizontal adjustment due to the fact that the base must be built up, making alinement with the ordinary type of pillow block very difficult.—Rollway Bearing Co., Syracuse, New York.

Trimmer for Molded Hose

The machine here pictured installed in a rubber plant is designed for trimming the overflow from molded garden hose. It is also adapted for trimming carriage tires, beading, insulated wire and similar molded products. The trimmer is shown in the right foreground of the picture and an automatic reeling device designed as a part of the equipment by the same engineering company.

Molded Hose Trimming Machine

The trimmer is adjusted to feed at the rate of 125 feet per minute. Both side overflows are removed at one operation by abrasion wheels. The guide-guards are so constructed that only the overflow to be removed is exposed to the cutting wheels, and injury to the cover of the hose is impossible through careless operation. The machine is adjustable to all the different sizes by the adjustment of a hand-wheel, and operates successfully on a large variety of molded products.—The Mechanical Engineering Corporation, 302 Broad avenue N. W., Canton, Ohio.

Shurvent Fuse

The Shurvent fuse differs in design and construction from other renewable fuses. It has a patented venting arrangement that allows the gases to escape fast enough to keep from injuring the casing, yet not so fast that they do not extinguish the arc. This feature lessens the expense of new casings. If a machine blows a fuse 10 times in a year money can be saved by using this new style of fuse.—Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pennsylvania.

Machinery Patents

The United States

(1,542,346) APPARATUS FOR GRINDING HARD RUBBER. This apparatus comprises a high speed steamheated or water-cooled mill which crushes the hard rubber against a ring under high centrifugal force. Jets of air or inert gas stir up the dust, dispersing the locally generated heat. The finely ground material is delivered by air current to a centrifugal separator, while the tailings are returned to the mill for regrinding. A water screen cools the hot gases. The ground dust is delivered to collecting device where it collects on the inner surface of cloth bags from which it is emptied periodically.—W. C. Hoover and Ambrose Dwyer, Akron, Ohio, assignors to The B. F. Goodrich Co., New York, N. Y. United States patent No. 1,542,346.

(1,542,907) RUBBER CUTTING OFF MACHINE. This machine is designed for cutting off relatively short pieces of various forms and diameters, serving as blanks for mold cured articles. It is double acting in that it includes two cutting stations and a rotary knife. The cutting operations are performed quickly by the cutting knife swinging backward and forward, operating first upon one bar of stock and then upon the other, thereby cutting when moving in either direction.—L. J. Pianarosa, Trenton, New Jersey, and William Nichols, Bridgeport, Connecticut, assignors to The Black Rock Manufacturing Co., Bridgeport, Connecticut. United States patent No. 1,542,907.

(1,543,896) SOLID TIRE BUILDING MACHINE. This apparatus is attachable to a calender delivering rubber in strip form. A steel tire rim is rotated by gearing in the lower section of the apparatus and receives upon its circumference the calendered rubber strips. The upper section progressively presses these strips on to the rim by the action of rolls of various widths and contours journaled in a turret, each roller being adapted to work upon a different size or type of tire base.—George Wise, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y. United States patent No. 1,543,896.

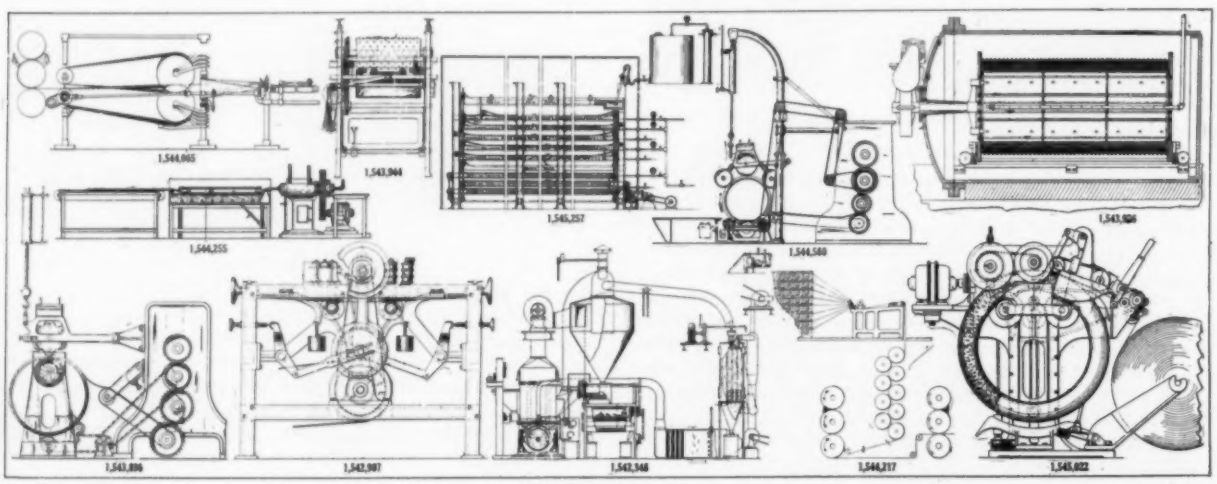
(1,543,926) VULCANIZING INSULATED WIRE, ETC. In order to provide access of the heating medium to the individual spaced layers of insulated wire, the latter are reeled on a hollow metal support and a ply of burlap is laid between each layer of wire which releases the rubber insulation from deforming strains while permitting circulation of the heat.—A. R. Kemp, Towaco, New Jersey, assignor to Western Electric Co., New York, N. Y. United States patent No. 1,543,926.

(1,543,944). TIRE-FABRIC STRIPPING MACHINE. This machine is designed to strip from vulcanized cord tires plies of cord fabric comparatively clean and in such condition as to be conveniently used for tire patching purposes. The machine embodies a feed roll with surface studded with pins to engage the tread of the tire strip and feed it against a reciprocating mechanism which serves to spread the strip and separate the fabric piles.—E. E. Mitchell, Detroit, Michigan. United States patent No. 1,543,944.

(1,544,065) MACHINE FOR MAKING TIRE TREADS. Sheet rubber delivered by a calender is received by this mechanism which folds it upon itself into a pyramidal form. Each fold is so positioned that the centers of the several folds register with one another. The folded sheet is then conveyed along and the folds are compressed into a homogenous mass, and then automatically cut to desired lengths.—H. I. Morris, Los Angeles, California, assignor by mesne assignments to The Yoder-Morris Co., Cleveland, Ohio. United States patent No. 1,544,065.

(1,544,217) MACHINE FOR MAKING WEFTLESS CORD FABRIC. A number of unconnected cords are drawn from a supply under equal tension, arranged in parallel relation and led to a calender, passing on their way through a drying apparatus the better to receive their coating of rubber. Under even motion speed the cords maintain their parallel relation in the calender while the rubber is pressed between the cords so that they are completely covered and are spaced uniformly in the sheet with the spaces between cords filled with rubber. Passage through a second calender coats the second side of the sheet of cords.—Martin Castricum, Springfield, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts. United States patent No. 1,544,217.

(1,544,255) MAKING NON-POROUS TUBES, ETC. It has been determined that the elimination of porosity in tubes forced from a tubing machine depends upon prevention of the formation of large sulphur crystals in the rubber which otherwise melt out causing porosity. Cooling of the tube is effected by passing it promptly as tubed into a pan of water through which it is conveyed on rollers and sprayed as it passes to a belt conveyor on which it is cut to desired lengths.—C. E. Maynard, Northhampton, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts. United States patent No. 1,544,255.



(1,544,560) SOLID TIRE MAKING MACHINE. This machine operates in conjunction with a rubber calender. It is adaptable for making tires of different size and draws the tire building material in strips from the calender onto an annular tire base or rim in successive plies or laminations by the rotation of the tire rim and compresses it to form a laminated solid tire.—E. E. Davidson, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y. United States patent No. 1,544,560.

(1,545,022) TIRE WRAPPING MACHINE. This wrapping mechanism will enclose a tire, coil of wire, or garden hose, etc., with a closely fitting wrapping strip of expansible paper, differentially expanded to fit the article. Crinkled paper is used of a width sufficient to encircle the cross sectional circumference of the tire or coil of goods. The central portion of the strip applied along the tread of the tire is stretched out over the tread differentially to expand the crinkles so that the wrapping strip will be cupped around the cross section of the tire. The expansion is effected locally so that the paper fits smoothly to the double curvature of the tire.—Wm. M. Wheildon, assignor to E. H. Angier, both of Framingham, Massachusetts. United States patent No. 1,545,022.

(1,545,257) MAKING ARTICLES DIRECT FROM SOLUTIONS OF RUBBER. The process consists in streaming rubber latex into a coagulant and successively passing the coagulated material, for example a rubber thread, continuously by conveyors through a succession of treatments to convert the material into a dried and vulcanized product.—Ernest Hopkinson, New York, and W. A. Gibbons, Little Neck, both in New York, assignors to Revere Rubber Co., Chelsea, Massachusetts. United States patent No. 1,545,257.

1,542,207 Repair vulcanizer. George S. Barker, Denver, Colorado.

1,542,255 Tire strapping press. John W. Leslie, Evanston, assignor to Signode System, Inc., Chicago, both in Illinois.

1,542,422 Rubber punching machine. Herman O. Stubbs, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

1,542,797 Tire mold. Thomas Midgley, Hampden, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts.

1,542,798 Tire mold. Thomas Midgley, Hampden, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts.

1,542,799 Tire mold. Thomas Midgley, Hampden, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts.

1,542,800 Tire mold. Thomas Midgley, Hampden, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts.

1,542,801 Tire mold. Thomas Midgley, Hampden, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts.

1,542,802 Tire mold. Thomas Midgley, Hampden, assignor to The Fisk Rubber Co., Chicopee Falls, both in Massachusetts.

1,543,297 Tire liner cleaner. Edwin E. Robinson, Akron, Ohio, assignor to American Radiator Co., Chicago, Illinois.

1,543,828 Combined shoe tree and drier. Ann G. Doyle, Chicago, Illinois.

1,543,890 Method of and apparatus for vulcanizing rubber. Robert R. Williams, Roselle, New Jersey, assignor to Western Electric Co., Incorporated, New York, N. Y.

1,544,011 Tire mold handling device. John Kearns, Conshohocken, and William Y. Duncan, Barren Hill, both in Pennsylvania.

1,544,316 Apparatus for forming tire beads. Reginald Hazeltine, assignor to The Fisk Rubber Co., both of Chicopee Falls, Massachusetts.

1,544,546 Device for producing tire carcass material and the like. Erle K. Baker, Chicago, Illinois.

1,544,547 Pneumatic arch support. George S. Barker, Denver, Colorado.

1,544,601 Tool for consolidating tacky sheets. James W. Schade, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

1,544,740 Tire cutter. Frank H. Grove, Columbiana, Ohio.

1,545,033 Vulcanizing device. Richard S. Burdette, assignor to The Goodyear Tire & Rubber Co., both of Akron, Ohio.

1,545,265 Device for use with rubber thread working machine. William J. Maloney, assignor to The Ansonia O & C Co., both of Ansonia, Connecticut.

1,545,439 Process and improved mold for making vehicle tires, etc. Edward Nelson, Belleville, New Jersey, assignor to O. & W. Co., New York, N. Y.

1,545,460 Stapling machine. William C. Stevens, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

The Dominion of Canada

251,066 Vulcanizing table for the manufacture of boots and shoes. George Dawans, Liege, Belgium.

251,257 Machine for testing porosity of inflatable articles. The Goodyear Tire and Rubber Co., assignee of William Stephens, both of Akron, Ohio, U. S. A.

251,579 Combined tire casing turner and work support. The KeHawke Manufacturing Co., assignee of Paul E. Hawkinson, both of Minneapolis, Minnesota, U. S. A.

The United Kingdom

231,849 Lasting machine. B. F. Goodrich Co., 1780 Broadway, New York, N. Y., assignees of F. J. Macdonald, Ellet, Ohio, both in the U. S. A.

232,595 Making tire covers. K. G. A. Backdahl, 32 Sveavägen, Djursholm, Sweden.

232,833 Steam vulcanizer, thermostats. R. Rasmussen, 38 Fredensgade, Aarhus, Denmark.

233,027 Mold for pneumatic tires. T., R., and J. L. Nuttall, 532 High Road, Goodmayes, Essex.

233,028 Press with rubber cover for cementing footwear. F. H. and H. S. Pochin and J. H. Bromley, Standard Engineering Co., Ltd., Evington, Valley Road, Leicester.

233,068 Machines for mixing rubber. H. E. Kenyon, Victoria street, Droylsden, Manchester.

233,520 Machines for molding tiles, etc. H. Banger, Constitutional Buildings, East Grinstead, Sussex.

Germany

416,165 (September 7, 1924). Vulcanizing apparatus particularly for dental purposes. Gustav Maralik, Baden b. Wien; represented by: August Dörge, Falkenstrasse 15 b., Munich.

Process Patents

The United States

1,542,388 Process for making rubber articles through employing water solutions of rubber. Ernest Hopkinson and Willis A. Gibbons, both of New York, N. Y., assignors to Revere Rubber Co., Chelsea, Massachusetts.

1,542,791 Method of manufacturing elastic tires with recesses filled with air under pressure and tightly closed by rubber caps. Charles Edmond Veil-Picard, Paris, France.

1,542,939 Process of drying latex. Ernest Hopkinson, assignor to General Rubber Co., both of New York, N. Y.

1,543,283 Non-sticking liner. Abram E. Falor, John B. Dickson and Fred H. Amon, all of Akron, Ohio, assignors to The B. F. Goodrich Co., New York, N. Y.

1,543,506 Method of making hollow rubber articles such as nipples, finger cots, etc. Thomas W. Miller, assignor to The Faultless Rubber Co., both of Ashland, Ohio.

1,544,023 Method of curing molded rubber articles. Henry R. Minor, Ossining, N. Y., assignor to General Carbonic Co., New York, N. Y.

1,544,262 Marking rubber. Thomas Midgley, Hampden, Massachusetts, assignor to the Fisk Rubber Co., Chicopee Falls, Massachusetts.

1,544,305 Making tire treads from continuously forming rubber composition first made into strips. George F. Fisher, Roselle, New Jersey, assignor to Morgan & Wright, Inc., Detroit, Michigan.

1,544,312 Method of making an elastic border band and ruffle. Matthew L. Gray, assignor to Plymouth Rubber Co., Inc., both of Canton, Massachusetts.

1,545,146 Method of weaving a new elastic fabric consisting of a sequence of plain and transversely ribbed sections. Alfred Lauraine, assignor to Société du Caoutchouc Manufacture, both of Paris, France.

1,545,257 Process for making thread, tubing, strips, etc. directly from solutions or suspensions of rubber latex. Ernest Hopkinson, New York, and Willis A. Gibbons, Little Neck, both in New York, assignors to Revere Rubber Co., Chelsea, Massachusetts.

The Dominion of Canada

251,248 Method of making golf balls with rubber wound cores. The Dunlop Rubber Co., Limited, Regent's Park, County of London, assignee of Albert Ernest Fenfold, Birmingham, County of Warwick, both in England.

251,533 Method of making hard rubber articles from a hard rubber vulcanizing compound, containing a blowing agent. The Miller Rubber Co., assignee of Charles Flemming, both of Akron, Ohio, U. S. A.

The United Kingdom

232,257 Method of removing insulation from electric conductors. British Thomson-Houston Co., Ltd., Crown House, Aldwych, London, assignees of H. P. Hollnagel, 22 Hampden street, Swampscott, Massachusetts, U. S. A.

232,421 Colored rubber articles—vulcanizing. North British Rubber Co., Ltd., and W. G. Martin, both of Castle Mills, Fountainbridge, Edinburgh, Scotland.

233,654 Process for treatment of rubber latex. General Rubber Co., 1790 Broadway, assignees of R. Hopkinson, 56 West 58th street, both in New York, N. Y., U. S. A.

233,676 Method of molding hollow rubber, etc. articles. F. T. Roberts, Yonkers, New York.

Germany

415,070 (June 21, 1925). Method of making rubber footwear. Henry Christian Louis Dunker and Lars Gustaf Artur Stibe, Helsingborg, Sweden. Represented by Dr. G. Lotterhos, Frankfurt-am-Main.

415,569 (February 25, 1920.) Method of making balloon fabrics. Ketschendorfer Kunstlederfabrik A.-G., Berlin.

Design Patents

Germany

910,392 (April 20, 1925). Portable vulcanizing apparatus. Josef Zängl, Feilitzschstrasse 6, Munich.

911,278 (April 18, 1925). Stretching device for pneumatic covers. Heinrich Rupprecht, Kleiststrasse 30a., Hamborn a. Rh.

911,412 (July 23, 1924). Rubber spreading machine with rotating, heatable drum. Continental Caoutchouc und Gutta-Percha Compagnie, Hannover.

911,980 (May 5, 1925). Hot pressure cover for rubber and the like for dental vulcanizing apparatus. Wilhelm Kather, Ludwigstrasse 15, Bremen.

The Editor's Book Table

Book Reviews

"INSTITUTION OF RUBBER INDUSTRY TRANSACTIONS." The official organ of the Institution of the Rubber Industry, published bimonthly at Faraday House, 10 Charing Cross Road, London W. C. 2. Vol. 1, No. 1, June, 1925.

THE contents of this first number includes, besides Institution news, valuable articles on the acidity of raw rubber by G. Stafford Whitby, and on gutta percha, its preparation and general properties by C. W. H. Howson. Both papers are selections from those presented at meetings of the Institution last year.

"SUGGESTIONS ON THE USE OF FACTICE." THE STAMFORD Rubber Supply Co., Stamford, Connecticut, 1925. Paper, 35 pages, 5 by 7 inches. Indexed.

This booklet, in 10 separate articles by rubber experts and chemists, sets forth the practical merits of factice in rubber compounding. This information is particularly timely in view of the soaring prices now ruling for crude rubber, beside having value as a contribution to the technology of rubber compounding.

"UNITED STATES GOVERNMENT MASTER SPECIFICATIONS." Published by the Department of Commerce, Bureau of Standards, Washington, D. C.

These specifications were officially promulgated by the Federal Specifications Board on given dates for the use of the departments and independent establishments of the Government in the purchase of rubber goods. The circulars and titles are as follows:

No. 49b	Steam Hose.
No. 94a	Asbestos Metallic Cloth Sheet Packing.
No. 96a	Compressed Asbestos Sheet Packing.
No. 97a	Asbestos Metallic Cloth Gaskets.
No. 98a	Diaphragm Packing.
No. 101a	Flax Packing.
No. 103a	Asbestos High-Pressure Rod Packing.
No. 104a	Low-Fressure Spiral Gland Packing.
No. 110a	Cloth Insertion Rubber Packing.
No. 111a	Rubber Packings and Gaskets (Molded, Sheet, and Strip).
No. 112a	Wire insertion Rubber Packing.
No. 113a	Tuck's Packing.
No. 114a	Rubber Valves.
No. 136a	Rubber-Metal Gasoline Hose.
No. 215a	Surgeons' Rubber Aprons.
No. 220a	Cloth-Inserted Hot-Water Bottle.
No. 221a	Rubber Hot Water Bottles.
No. 226a	Cloth-Inserted Ring Cushions.
No. 227a	Rubber Ring Cushions.
No. 232a	Rubber Air Pillows.
No. 233a	Rubber Sheeting.
No. 234a	Cloth-Inserted Fountain Syringe.
No. 235a	Rubber Fountain Syringe.
No. 291	Friction Tape.
No 292	Rubber Insulating Tape.

"COMMERCE YEARBOOK, 1924." COMPILED BY THE BUREAU of Foreign and Domestic Commerce, Julius Klein, director. Published by Government Printing Office, Washington, D. C. Cloth, 718 pages, with index, 6 by 9 inches.

This third issue of a publication containing so much useful material is arranged in twenty-two main divisions, with various subdivisions. The statistics included were taken from reliable governmental and commercial sources, while the surveys and analyses were contributed by authorities in their various lines, located in various parts of the world. Some twelve pages are devoted to a comprehensive review of the rubber industry.

"THE TIMES OF CEYLON GREEN BOOK, 1925." PUBLISHED BY The Times of Ceylon Co., Ltd., Colombo, Ceylon. Cloth, 1302 pages, with index, 5 by 8½ inches.

The 1925 issue of the "Green Book" is considerably larger than the edition of the previous year, several of the divisions having been amplified and brought up to date. As usual, the publication contains many items of value to the rubber industry, particularly the sections dealing with the development of the island's various rubber estates.

REPLETE WITH INFORMATION FOR RUBBER MANUFACTURERS.—H. C. Pearson's "Crude Rubber and Compounding Ingredients."

New Trade Publications

"COTTON SMALL WARES," REPRESENTS THE TITLE OF ONE OF THE Tariff Information Surveys now being issued by the United States Tariff Commission. Among other important items the bulletin states that production of elastic webbing in 1923 represented a total value of $25,774,024.

"VULCANIZATION ACCELERATORS—THE SOURCE, MANUFACTURE and Properties of Rubber Pigments" is the title of Bulletin No. 4, as issued by E. I. duPont deNemours & Co., Inc., Wilmington, Delaware.

"WEAREVER," SPONGE RUBBER PRODUCTS, CUSHIONS, MATS, ETC., are listed in an illustrated loose-leaf catalog as among the goods manufactured by The Faultless Rubber Co., Ashland, Ohio.

"THE YEAR-BOOK OF THE DEPARTMENT OF AGRICULTURE, Ceylon-1925" contains among various items of interest two chapters devoted to some of the rubber diseases.

THE FOLLOWING INTERESTING PUBLICATIONS HAVE BEEN RECENTLY received: broadside and house organ, "Mohawk Messenger," from the Mohawk Rubber Co., Akron, Ohio; house organ, "The Wingfoot Clan," from the Goodyear Tire & Rubber Co., Akron, Ohio; and broadside from the Dayton Rubber Manufacturing Co., Dayton, Ohio.

FOUR LOOSELEAF DATA SHEETS SHOWING THE ACTION ON RECLAIM stocks of ethylidine, aniline, hexamethylene tetramine, diphenyl guanidine and triphenyl guanidine, have been issued by The Roessler & Hasslacher Chemical Co., 709 Sixth avenue, New York, N. Y.

SERVICE, A 28 PAGE ILLUSTRATED BOOKLET ISSUED BY THE RUBBER Service Laboratories Co., Akron, Ohio, introduces the personnel of the staff, describes the advanced laboratory facilities for research and tests and states the advantages of the popular accelerators, softeners and colors produced or handled by the company.

Recent Articles Relating to Rubber

THE FUNCTION OF RUBBER RESIN IN THE VULCANIZATION OF MIXINGS CONTAINING ACCELERATOR AND ZINC OXIDE. Results are given of experiments with mixings containing various amounts of zinc oxide together with either Hexa or D. P. G. and explanation of the function of the resin acids in these mixings.—G. Martin and W. S. Davey. *Journal of the Society of Chemical Industry*, July 3, 1925, 317 T-320 T. Tables and graphs.

TWIST IN TIRE CORD AND SOME PHYSICAL EFFECTS. An investigation by the Cotton Research Co.—H. P. Gurney and E. H. Davis. *Textile World*, July 11, 1925, 219-223. Tables and graphs.

THE MANUFACTURE AND TESTING FOR ACCELERATOR ACTION OF THE DI- AND TRI-ARYLGUANIDINES. PART I.—W. J. S. Naunton. *Journal of the Society of Chemical Industry*, May 22, 1925, 244 T to 247 T. Tables and charts.

VARIABILITY OF PLANTATION RUBBER WITH APPENDIX ON METHODS OF TESTING. Investigations of samples of plantation Para rubber prepared in connection with the Ceylon Research Scheme. *Bulletin of the Imperial Institute*, July, 1925, 135-149. Tables.

THE ELECTRO-DEPOSITION OF RUBBER. Communication No. 234 from the Research Laboratory of the Eastman Kodak Co., Rochester, N. Y. Presented before the Division of Rubber Chemistry at the Baltimore meeting of the American Chemical Society.—S. E. Sheppard and L. W. Eberlin. *Industrial and Engineering Chemistry*, July 1925, 711-714. Illustrated, diagrams, tables.

RIDING QUALITIES OF MOTOR VEHICLES. An experimental study of the relative riding qualities of tires and springs by measurement of the vertical displacement and of the accelerations occurring on the displacement curve supplemented by observation of the interrelation of the four tires or springs under actual road service.—R. W. Brown. *Journal of the Society of Automotive Engineers.* July, 1925, 107-114. Illustrated, diagrams.

RÖNTGEN SPECTROGRAPHS OF RUBBER UNDER DIFFERENT DEGREES OF ELONGATION. A new method for studying rubber and its extensibility.—J. R. Katz, *Chemiker-Zeitung* 49, 353-354.

NOMENCLATURE OF ORGANIC ACCELERATORS. G. Bruni, *India Rubber Journal* 67, 232, 1924.

THE NOMENCLATURE OF AN ACCELERATOR.—B. D. Porritt. Reply by Clarence Smith. *India Rubber Journal,* 67, 588-589.

NOMENCLATURE OF—CH(SH) COMPOUNDS.—G. S. Whitby. *India Rubber Journal* 1030-1034, 1924.

NEW METHODS OF VULCANIZATION.—S. Halen, *India Rubber Review* 25, No. 3, 40-42.

RUBBER GRINDING MILL LININGS AS A MATERIAL TO RESIST ABRASIVE MATERIALS.—One test on cement, using both a rubber- and a steel-lined mill, showed 20 per cent more capacity, 10 per cent less power required and 0.9 per cent more material through 200-mesh with the rubber lining.—B. W. Rogers. *Journal American Ceramic Society* 8, 326-328, 1925.

LATEX GLOBULES. Resumé of the study of latex microscopically. Detailed knowledge of the ultimate particles of which rubber latex is composed should help to determine the behavior of rubber in manufacturing processes.—Henry P. Stevens. *Bulletin of the Rubber Growers Association,* May 1925, 301-302.

TESTS OF DINITROPHENOL IN THE PREPARATION OF CRÊPE AND SMOKED SHEET RUBBER.—H. P. Stevens. *Bulletin of the Rubber Growers Association,* June, 1925, 359-360.

THE INFLUENCE OF HEAT ON THE PLASTICITY OF RUBBER.—In plasticizing rubber, 2 distinct effects have long been recognized in an indefinite way, an immediate but temporary softening and a softening which is slower to appear but is more permanent. By testing crude rubbers at increasing temperatures and pressures it was found that above a definite minimum range of temperature (50-60 degrees), which is the same at all pressures, the plasticity is a linear function of the temperature, but that below this critical temperature no such relation exists.—B. Marzetti, *Giornale di Chimica Industriale ed Applicata* 6, 567-70 (1924).

THE PREPARATION OF RUBBER BEFORE VULCANIZATION AND MANUFACTURE. A semi-popular illustrated description of the Dunlop Rubber Co.'s plant at Fort Dunlop, Birmingham, covering the preparation of raw material, washing, drying, mastication, ingredients, their classification, nature, functions and preparation, and mixing fillers and pigments with rubber.—Anonymous. *Industrial Chemist,* 1, 127-132, 1925.

IS RAW RUBBER PARTIALLY CRYSTALLIZED. Unvulcanized Hevea rubber which has been stretched about 100 per cent gives an X-ray spectrum similar to that produced by fibrous materials. It is probable that the "crystals" which cause the "fiber diagram" with stretched rubber are not pre-existent in the rubber, but are actually formed in the operation of stretching. If a sample of naturally "crystalline" rubber is milled, the product shows no crystalline interference phenomena, but these recur when the rubber is stretched; heating to 100 degrees also removes natural "crystalline" character.—J. R. Katz and K. Bing, *Zeitschrift für Angewandte Chemie,* 1925, 38, 439-441.

VULCANIZATION AND ACCELERATION. PART II. SERIAL.—André Dubosc. *Rubber Age,* New York, July 10, 1925, 240-241.

EFFECT OF STRESS ON HOSE AND BELT DUCKS. Describes the effects of various types of stresses on the distortion of hose and belt ducks, both before and after fabrication into hose and rubber belting and on the basis of observed characteristics suggests possible directions in which it would appear that improvements in mechanical fabrics might be made.—H. P. Gurney. *India Rubber Journal,* June 13, 1925, 943-949. Tables, graphs, diagrams.

RECENT DEVELOPMENTS IN THE RUBBER PLANTING INDUSTRY.—Report by Herbert Ashplant. *India Rubber Journal,* June 20, 1925, 990-992.

THE INDUSTRIAL IMPORTANCE OF RUBBER LATICES.—*Gummi-Zeitung,* June 26, 1925, 1548-1549.

THE APPLICATION OF MICRO-MANIPULATORS AND OTHER NEW OPTICAL INSTRUMENTS IN MICROSCOPIC STUDIES OF RUBBER LATICES IN THE TROPICS.—*Gummi-Zeitung,* June 5, 1925, 1360-1361. Diagram.

Interesting Letters from Our Readers

Best and Cheapest Rubber Land in Mâlaya

THE EDITOR,

Dear Sir: The estimates of rubber production and consumption during the next few years published in the report by the U. S. Department of Commerce, have drawn the attention of manufacturers, in America and elsewhere, to the necessity for insuring adequate supplies of this material.

The fact that consumption during 1925, to date, has exceeded the estimates, and that production has been considerably less than estimated, indicates there will be a real famine considerably earlier than 1928, the date given in the report when the demand would first exceed the potential supply, if restriction of output were not in force.

In the first place, restriction is in force, and it would take the growers at least two years to recruit the labor necessary for full production from British estates, as labor is now fifty per cent below the requirements for unrestricted daily tapping.

Secondly, it is doubtful if estates will ever return to daily tapping of all trees, as the conservative methods adopted under restriction have been beneficial to the trees, and the reduced production is more than counterbalanced by the higher prices obtained. Producers have almost unanimously declared their intention of maintaining present methods of tapping, irrespective of the removal of restriction.

Thirdly, owing to the increasing popularity of balloon tires and the rapidly extending European demand, it is probable that the actual consumption during the next few years will be considerably higher than the estimates.

Owing to the length of time required for rubber trees to reach maturity (5-10 years), it is impossible for additional planting to remedy the existing situation, and the one obvious solution is for manufacturers to follow the example of the United States, Goodyear, Dunlop and other manufacturing companies, and obtain control of existing producing areas before the famine arrives. This action would enormously strengthen any organization, as it would ensure adequate supplies at all times at the actual cost of production (not exceeding 20 cents per pound), thus enabling substantial savings in expenditure and avoiding market fluctuations and variations in quality of rubber used.

Owing to the favorable climatic and labor conditions, it has been found that Malaya comprises the finest and cheapest rubber land in the world. Certain limited areas of highly productive land are available on terms which will show immediate substantial and increasing profits. Over $30,000,000 of American capital and more than $500,000,000 of British capital are invested in rubber plantations, and the investment is regarded as an eminently safe and desirable one. The industry is on a thoroughly sound basis, and facing a period of great prosperity, which is reflected in the fact that the shares of the average plantation company are now quoted at about twice their par value.

June 20, 1925 R. E. G.

New Goods and Specialties

"Indexo" Finger Toothbrush of Rubber

A NEW toothbrush, illustrated, has been recently placed on the market. It has no bristles to fall out and be swallowed, perhaps causing illness, for it is made of pure rubber and has on its under surface little soft rubber teeth. The brush is made in the form of a cap which fits over the finger so that all surfaces of the teeth can be reached and the amount of pressure be governed by the sense of touch. After using, the brush can be cleaned with running water. According to the manufacturers, this rubber tooth brush cannot hurt the gums nor make them bleed nor carry infection into wounds where the teeth are under treatment. It cannot retain bacteria as do the bristles and sockets of the ordinary toothbrush. It is said to be highly recommended for use by nurses in the hospitals and for cases of pyorrhea and also for use by mothers in cleaning the gums of infants.

"Indexo" Rubber Toothbrush

The brush comes in a little celluloid box which is tight, clean, and just fits into a vest pocket. Its size and convenience make it useful for the traveler, the autoist or for school children. The brush comes in three sizes—large, medium or small. —Indexo Co., Inc., 33 West 42nd street, New York, N. Y.

Rubber Tires for Milk Cans

The very interesting idea of a rubber covering for milk cans is suggested by a Mr. Macrubber of London in the *India Rubber Journal*. The rubber will eliminate the terrific racket caused by banging cans, materially lessen the cost of repair and prolong the "life" of the vessels.

Macrubber's first problem was to equip cans already in use, without changing their construction. The heavy bands which project below the bottom of the vessels, were covered with rubber, forming a sort of a tire, as illustrated in Figure 1. The rubber at AA is held to the inside of the band by a wired and beaded edge. The points at BB are heavily cushioned, while at CC the projection of the band permits a small clinch.

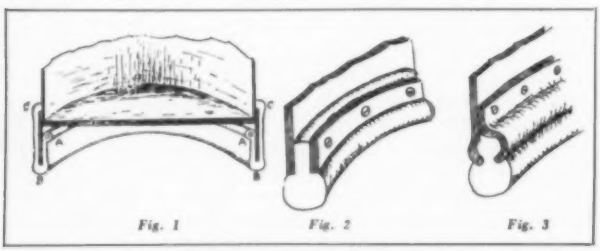


Fig. 1 *Fig. 2* *Fig. 3*

Rubber Armored Milk Cans

Figure 2 illustrates Macrubber's idea of simplifying the whole conception by a slight mechanical addition. The rubber tire is formed with a flange attached. This flange passes up between the inside of the band which runs around the bottom of the can and a smaller metal band, the latter being screwed or bolted through the rubber flange to the outer wall.

There is a third suggestion offered to manufacturers to considerably improve the construction of new containers, as shown in Figure 3. The iron band at bottom is convexed on the outside, with an opposite inner band attached to it with screws, the hollow thus formed engaging upper half of a suitably designed tire.

A Dainty Rubber Garter

A most attractive new garter for the fastidious woman is now being put on the market. The "Dancette" garter is cleverly fashioned of a fine quality of georgette and trimmed with dainty clusters of tiny rosebuds and silk ribbon leaves. The flowers are in contrasting shades to the color of the material of the garter. As may be seen by the illustration, this garter is wide enough to be used with rolled hose and to cover all unsightly bunching of the stocking top. The garter comes in three color combinations: white, pink and an attractive shade of coral—all with the contrasting flowers and leaves.—R. & G. Corset Co., Inc., 881 Broadway, New York, N. Y.

"Dancette" Garter

Self-Curing Tire Repair

The rubber device here pictured is known as Plu-Gum. It is a rivet-shaped device of self-curing rubber which can readily be inserted through a tire puncture by the aid of a special tool or needle, wet with a cleaning fluid and operated from the inner side of the tire casing. When Plu-Gum is snugly positioned in as shown, the repair is completed by simply cutting off the protruding stem or burning it off with a lighted match. The compression of the tire tread holds the device while the curing property of the Plu-Gum effects a permanent repair.

Plu-Gum Tire Repair

Thus the tire is preserved against the formation of sand blisters and general deteriorations certain to result from unrepaired cuts that pierce the fabric structure of a tire.—The Plu-Gum Co., Cleveland, Ohio.

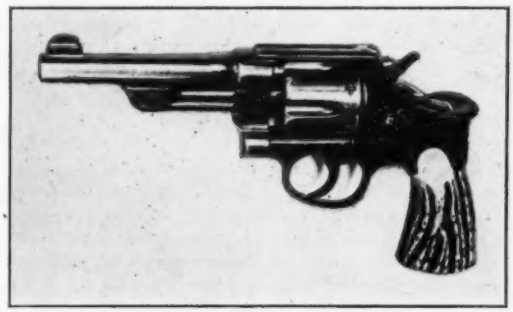
Comb for Bobbed Hair

Like hats, combs are now designed specially for the use of those women who have bobbed their hair. The "Bobbie", one style of which is illustrated, is one of the well-known "Ajax" line of combs. It is solidly constructed of hard rubber with sturdy back and molded teeth and is finely finished. One style is said to be specially useful in bath houses, etc., for it may be hung up and so be kept not only out of the way, but ready for instant use. Each of the "Bobbie" combs is provided with a handsome, gold stamped slide or case of leather. The combs come with waved or straight and fine or coarse teeth. They are made in several different lengths and widths and one style has a handle.—The Vulcanized Rubber Co., 251 Fourth avenue, New York, N. Y.

"Bobbie Ajax" Comb

Rubber Shock Absorber for Revolvers

The recoil shock resulting from the discharge of a large calibre revolver, such as used in the police service, is sufficiently strong to be worth while eliminating, especially as it is liable to impair the aim in rapid firing. A simple rubber shock-absorbing



Sweesey's Pistol Recoil Absorber

device is here pictured attached to a revolver. It is molded in one piece to fit around the top of the grip to which it is attached from the rear by a single screw. The upper edge of the rubber is molded with a flange which protects the knuckle joints of the thumb and index finger. This practical device is appropriately the invention of N. M. Sweesey, Deputy Sheriff, County of Los Angeles, California.

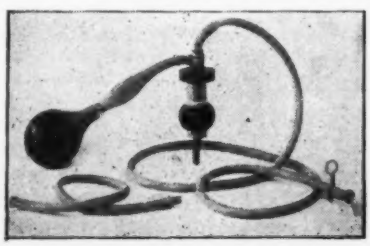
Rocking Chair Tips

A leading unit in the line of rubber goods and specialties manufactured by The Elastic Tip Co., Boston 9, Massachusetts, is the rocking chair tip. These rubber tips, illustrated, are designed to prevent scratching of furniture and baseboards by the sharp ends of rocking chair runners. Their use might also prevent annoying accidents sometimes occasioned by bumping into the rockers. The tips are made in two sizes, ⅞ inch and 1-inch, and are held in place on the rockers by four tacks. They can be attached to the rocker very easily and quickly. These tips come packed in little blue boxes, a pair to a box, with the necessary tacks for applying, and a dozen boxes in a display carton.

Rocker Tips

Pump for Transferring Acid

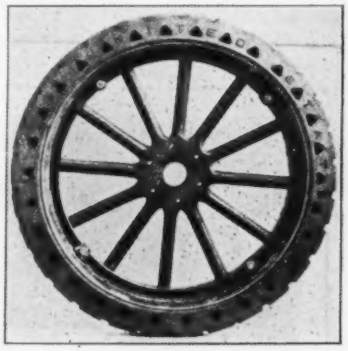
The "Acfil" pump shown herewith has been specially designed for transferring acid, like sulphuric acid, direct to accumulators or to other containers. It saves lifting or tilting the carboy and avoids the dangers as well as the waste of spilling the acid when making a solution or topping up cells. This pump involves no tilting or splashing, and, the manufacturers state, can be used in safety anywhere. Its capacity is about two gallons per minute. The rubber ball is fitted into the neck of the carboy and can be expanded or contracted to fit any size neck. It is connected with the bulb by a short tube. A longer tube reaches almost to the bottom of the liquid. From the top of this tube is taken the delivery pipe. By means of a spring clamp, the flow can be regulated at any amount from a drop to a full bore. The acid continues to flow so long as there is a slight head above its surface. Pressure on the bulb builds up pressure on top of the acid and forces it out unless it is prevented by the spring clamp already described.—Brown Bros., Ltd., Great Eastern street, London, England.



"Acfil" Acid Pump

The Cavex Cushion Tire

The Cavex cushion tire is designed for light truck service which normally uses 30 x 3½ pneumatic tires, and is interchangeable with these tires. Its name is formed from a reversed abbreviation of the words "external cavity." The usual hard rubber base insures the permanency of the adhesion of the tire to the steel rim.



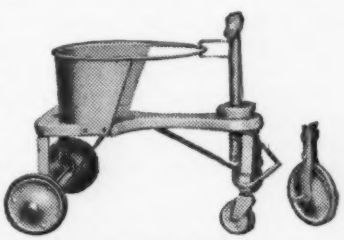
New Tire for Light Trucks

In this tire generous provision has been made for tire distortion. The deep center groove running through the tread together with the alternately-spaced "V" tread notches enables the upper portion of the tread to assume a high distortion under light impact forces. Provision is also made for further tread distortion by the introduction of alternately-spaced triangular cavities located in the sub-portion of the tread. Thus the tire cushions the vehicle under light impact as well as under heavy impact forces.

In this tire ample provision is also made for heat dissipation through the greater cooling surface area that is presented by the external cavities.—United States Rubber Co., 1790 Broadway, New York, N. Y.

Roll-A-Bi Baby Car

A new toy car for the baby is both a plaything and a protection. The Roll-A-Bi illustrated has a broad, comfortable seat with a metal back rest and rubber-covered metal supporting ring. It is sturdily built, substantially braced and has a front bumper which is rubber covered and designed to protect furniture and walls from being marred. The car is also equipped with rubber tired, roller-bearing wheels. According to the manufacturer, the car will prove a great aid in teaching the child to walk. It also helps to strengthen the limbs and keep the baby off the floor and consequently out of drafts.



New Type Baby Car

When the child is old enough to steer the car, the front frame and casters may be removed and a disk wheel attached to the steering post, which has a metal to metal bearing for strength and ease of operation. This convertible feature is exclusive with the Roll-A-Bi, it is said, and increases the length of time the little car can be used.—W. J. Baker Co., 1029 to 1035 Saratoga street, Newport, Kentucky.

Bathing Purse

The Neptune wrist purse illustrated enables the bather, man or woman, to carry some money even while in the bathing suit and in the water. Thus the bather can be independent of friends on the sands and will not have to return to the locker every time he or she wants a soda or desires to rent a beach chair. This wrist purse is made throughout of rubber and fits snugly around the wrist. It is skin sealed and fastens with a strong snap. No water can enter it, say the manufacturers, and it keeps money or anything else intrusted to it, safe and dry.—The Neptune Rubber Manufacturing Co., Irvington, New Jersey.

Safety Bathing Purse

De Luxe Helmet Diving Caps

The woman of discriminating taste will delight in these seamless, molded-in-one-piece bathing caps. Made from a remarkably fine quality rubber, very soft and pliable and at the same time exceedingly tough and strong, they stretch easily without tearing or wearing loose and out of shape. They present a rich appearance which is in good taste and also are extremely durable and long-lived. The caps may be obtained in either all-white or white-and-black.—Faultless Rubber Co., Ashland, Ohio.

Bathing Cap and Rubber Bandeau

The Chanticleer bathing cap marks another advance in the manufacture of molded rubber caps. The makers state that this cap combines the essential qualities—perfection of fit, excellence of quality and an attractive all over design. This design is in the form of a chanticleer as is shown by the illustration. The cap is made in six different colors. Another product by the same manufacturer is a bathing bandeau herewith pictured, which is said to be the only preventive which will absolutely stop water from seeping in under a bathing cap. It is very easily adjusted as it is made of two layers of stockinet material between which is a layer of rubber. In this way, it is given an elastic quality so that it may be worn to fit the head either tightly or loosely.—I. B. Kleinert Rubber Co., 485 Fifth avenue, New York, N. Y.

Bathing Cap with Ear Pockets

A bathing cap with pockets to fit the ears, which was brought out last season under the trade name of "Submarine," is now being offered in a new model. This cap is molded in one piece from pure rubber. Inside the cap are pockets to cover the ears. When the cap is put on, the lower extremities of these pockets are forced inward and engage the head snugly about the ears. Thus, say the manufacturers, water will be excluded, pressure on the ears relieved and the hair kept dry. It is also said that these ear pockets always retain their shape, a feat which is essential in order to seal the spaces caused by the irregular contour of one's head.

A further improvement in this cap is the chin strap as shown in the illustration, molded into the covers of the ear pockets. By reason of these chin straps being raised above the surface of the cap, an inward pressure is created which makes the cap water-tight without any pressure on the ears. The Submarine bathing cap is made in three sizes and in six colors.—Lew-Mar Products Co., 229-231 Fourth avenue, New York, N. Y.

LEW-MAR "SUBMARINE" CAP

KLEINERT "CHANTICLEER" CAP AND BATHING BANDEAU

FAULTLESS HELMET DIVING CAP

These Caps are Intended to Protect the Ears as Well as to Keep the Hair Dry.

Vacuum Top Bathing Cap

Most bathing caps rely on the tension of the border at the hair-line to make a water tight cap. A new type, illustrated, however, has for its object the provision of a partial vacuum between the cap and the head of the wearer so that no water will get underneath. On the outside of this cap a semi-spherical piece is placed, the edges of which are sealed to the body of the cap. Airports and valves are also provided. After putting on the cap, the bather presses down on the semi-spherical piece, and the air is expelled. When the bather's hand is removed, a partial vacuum is created which will not interfere with removing the cap, but does, the inventor claims, keep the cap a tight fit and prevents any water seeping underneath. United States Patent, No. 1,520,049.—Lynn W. Beman, 230 South Clark street, Chicago, Illinois.

Vacuum Bathing Cap

News of the American Rubber Trade

Rubber Industry Outlook

BRIEFLY summarized, the current outlook of the rubber industry is very satsifactory. Demand for rubber products of all kinds is well maintained after repeated advances of prices to consumers covering every variety of rubber goods. Thus the usual seasonal slackness has not occurred in the main lines of the industry. Tire and inner tube production continued at capacity rate through July while that planned for August indicates only 5 to 10 per cent below capacity. Footwear and mechanicals are active under conditions favorable to the continuance of good business at fair profits, and the same is true of the lesser lines of rubber production.

Doubtless many manufacturers are operating under difficulties owing to the high price of crude rubber but, in general, the trade will benefit in the long run. Some of the advantages brought about by the spectacular rise in crude rubber are already apparent in the effective measures with which American rubber manufacturers have responded to the situation created by restriction. As a result business is better in all manufactured rubber goods and the contributory or supply lines. Also profitable prices have been reestablished and cheap competition reduced.

The resources of the reclaiming industry have been brought to the rescue in a way that has emphasized its importance as a factor in the larger rubber industry. This has been done under difficult conditions brought about by wild ideas of scrap values on the part of the host of small dealers constituting the sources of supply for scrap rubber.

Other benefits accruing from the crude rubber situation are stimulation of crude rubber economy by the development of more efficient compounding practice which will endure after this critical period has passed. However, probably the most far reaching effect from rubber restriction and high prices will be found in the determined plan to interest American capital in American controlled rubber plantations designed to offset restriction for the future and to stabilize crude rubber prices.

Financial

New York Stock Exchange Quotations

July 23, 1925

	High	Low	Last
Ajax Rubber, com.	14	13⅝	13¾
Fisk Rubber, com.	20⅞	20⅜	20¾
Fisk Rubber, 1st pfd, (7)	107	106¾	107
Goodrich, B. F., Co., com.	57⅜	57¼	57⅜
Goodyear Tire & Rubber, pfd. (7)	104½	104	104¼
Goodyear Tire & Rubber, pr. pfd. (8)	105½	105⅛	105½
Kelly-Springfield Tire, com.	20¼	19⅞	20⅛
Keystone Tire & Rubber, com.	3	2¾	2⅞
Lee Rubber & Tire, com.	16⅝	16½	16½
United States Rubber, com.	64	61⅞	63
United States Rubber, 1st pfd. (8)	106	105⅝	106

Akron Rubber Stock Quotations

Quotations of July 18, supplied by Otis & Co., Cleveland, Ohio.

Company	Last Sale	Bid	Asked
Faultless com.	30	29	30
Firestone com.	127¼	127	130
Firestone 1st pfd.	99	97½	100
Firestone 2nd pfd.	100	100	101
General com.	239	240	....
General pfd.	102	102	....
Goodrich com.	57¼	....	....
Goodrich pfd.	99⅜	....	....
Goodyear com. V. T. C.	35	34½	35½
Goodyear pfd. V. T. C.	100	....	105
Goodyear pr. pfd. V. T. C.	104¼	....	....
Miller com.	187	....	187
Miller pfd.	105	104½	106
Star com.	17	....	....
Star pfd.	30	....	....
Swinehart com.	20	17	20
Victor com.	¾	¾	⅞
Victor pfd.	....	....	....

Dividends Declared

Company	Stock	Rate	Payable	Stock of Record
Firestone Tire & Rubber Co.	Com.	$1.50	July 20	July 10
Firestone Tire & Rubber Co.	6% Pfd.	1½% q.	July 15	July 1
Firestone Tire & Rubber Co.	7% Pfd.	1¾% q.	Aug. 15	Aug. 1
Fisk Rubber Co.	1st Pfd.	$1.75	Aug. 1	July 27
Goodrich, B. F., Co.	Com.	$1.00 q.	Aug. 15	Aug. 3
Goodrich, B. F., Co.	Pfd.	$1.75 q.	Oct. 1	Sept. 15
Goodyear Tire & Rubber Co.	Pr. pfd.	$2.00 q.	July 1	June 20
Goodyear Tire & Rubber Co. of Calif.	Pfd.	$1.75 q.	July 1	.....
Goodyear Tire & Rubber Co. of Calif.	Def. Pfd.	$1.75 q.	July 1	.....
India Tire & Rubber Co.	Com.	$2.00 q.	Oct. 1	Sept. 21
India Tire & Rubber Co.	Pfd.	1¾% q.	Oct. 1	Sept. 21
Mohawk Rubber Co.	Pfd.	1¾%	.....	.....
Mohawk Rubber Co.	Pfd. acc.	¼%	.....	.....
Mohawk Rubber Co.	Pfd. add. acc.	1%	July 20	.....
United States Rubber Co.	1st Pfd.	2% q.	Aug. 15	July 20
Williams Foundry & Machine Co.	Pfd.	1¾% q.	.....	June 25

Converse Rubber Shoe Co.

The Converse Rubber Shoe Co., Malden, reports for its fiscal year ended March 31, 1925, sales amounting to $3,928,305, compared with $4,995,286 in the preceding year. Net profits are expected to be sufficient to cover the 7 per cent preferred dividend by a slight margin. Current operations are running ahead of a year ago. The company has contracted for sufficient rubber to take care of its requirements up to February 1, 1926, at about one-half present prices for the raw material.

The Fisk Rubber Co.

The Fisk Rubber Co., Chicopee Falls, reports net sales for the month of June amounting to approximately $7,500,000, the biggest month in the history of the company and a gain of $750,000 over May. Earnings during these two months were almost as much per share of preferred stock as for the preceding six months, largely due to tire price advances. With about $20 per share already earned on the 189,515 shares of first preferred outstanding, it is believed that this issue may soon be placed on a regular $7 per annum dividend basis and a beginning made to clean up the accumulation of $26 per share now overdue on the stock.

The B. F. Goodrich Co.

The regular quarterly meeting of the directors of The B. F. Goodrich Co., Akron, Ohio, was held July 22. The directors issued the following statement.

The net earnings of The B. F. Goodrich Co. for the six months ended June 30, 1925, after deducting depreciation and interest on borrowed money and a reserve of $1,000,000 for estimated Federal income taxes amounted to $7,106,615. The net sales for the same period were approximately $60,400,000.

The regular dividend of $1.75 per share was declared on the preferred stock, payable on October 1, 1925, to stockholders of record September 15, 1925. A dividend of $1 per share was declared on the common stock without par value, payable on August 15, 1925, to stockholders of record August 3, 1925.

L. D. Brown, treasurer of the company, was elected vice-president and treasurer and H. Hough, comptroller, was elected vice-president and comptroller.

Dunlop Rubber Co., Ltd.

The Dunlop Rubber Co., Ltd., London, England, has successfully completed an important piece of refinancing. In the latter part of 1922 the British company issued through its American subsidiary, the Dunlop Tire & Rubber Corporation of America, $15,866,700 first mortgage and collateral trust sinking fund 7 per cent convertible gold bonds to retire substantially all the indebtedness incurred by the organization of its new tire manufacturing plants in the United States at Buffalo. The bonds were offered in two series, $11,000,000 in this country and

£1,000,000 in England, guaranteed by the British company.

To provide for the retirement of these 7 per cent bonds and its own 8 per cent mortgage debenture stock, the parent company, through conversion and public subscription, has placed £5,000,000 5½ per cent first mortgage debenture stock; the financing being jointly arranged by the British, Foreign and Colonial Corporation, Ltd., and Higginson & Co., the London partnership of Lee, Higginson & Co., of New York.

New Incorporations

ANODEX RUBBER CORPORATION, June 29 (New York), 200 shares, no par value. Incorporators: S. R. Wachtell, 2942 Bainbridge avenue; M. Grouf, 3960 Paulding avenue, and R. Meisel, 2009 Lafontaine avenue, all of Bronx, New York City. Rubber articles.

THE AUTO TIRE AND BATTERY CO., May 26 (Wisconsin), 250 shares, par value $100. Incorporators: Wm. H. Day, John J. Walsh and Leo A. Mullaney. Principal office, Milwaukee, Wisconsin. To deal in auto supplies.

B. & M. TIRE CO., July 24 (New York), $10,000. Incorporators: Morris Zarrow, 287 Clinton avenue, Albany, New York; Dora Zarrow and Benjamin Smelson, same address. Principal office, Albany, New York. General tire business.

THE BATES RUBBER CO., April 18 (Massachusetts), $10,000. Officers: Benjamin Thomas, 31 Hopkins road, Arlington, Massachusetts, president; Harry M. Belcher, 204 Church street, New York City, vice-president; Harry M. Ripley, Jr., 82 Beltran street, Malden, Massachusetts, treasurer; Ralph T. Eastman, 91 Boylston street, Watertown, Massachusetts, assistant treasurer. Incorporators: Wm. W. Duncan, Arthur B. Newhall, Benjamin Thomas and Harold C. Haskell. Offices, Watertown, Massachusetts, and New York City. To deal in footwear, clothing, tires tubes and other rubber articles and leather goods.

THE BEVERLY RUBBER CO., June 20 (Massachusetts), 1,000 shares no par value. Officers and incorporators: Wm. M. Floring, 31 Matchett street, Brighton, Massachusetts, president; Lincoln S. Monaghan, 49 Arborway drive, East Braintree, Massachusetts, treasurer; George Perley Nicholl, 185A Central street, Foxboro, Massachusetts, clerk. Principal office, Boston, Massachusetts. To deal in rubber, composition and synthetic rubber products, shoe soles, heels and taps, insulating materials, electric tape, compounds, etc.

THE BLACK CAT TIRE CO., March 18 (Alabama), $4,000. Incorporators: E. C. Allen, R. M. Parkerm, J. E. Bryan and R. G. Miles. Principal office, Birmingham, Alabama. To deal in tires.

BLACKWOOD TIRE SERVICE, INC., July 6 (New York), 100 shares, no par value. Incorporators: J. H. Dunlap, River road; C. C. Jewett, 400 Elmwood avenue, and M. E. Patterson, River road, all of Buffalo, New York. Principal office, Manhattan. To deal in tires.

CITY TIRE CO., INC., July 21 (New York), 1,500 shares, 500 shares, par value $100, and 1,000 shares, no par value. Incorporators: Prescott M. Dean, 228 N. Goodman street, Rochester; Cary W. Willis, Fairport, and Carroll E. Sutter, Webster, all in New York. Principal office, Rochester, New York. To deal in tires.

CONTROLLED AIR CUSHIONS, INC., May 20 (New York), 2,500 shares, no par value. Incorporators: George Hough Perry, Henry H. Creske, Emory J. Gearhart, Albert M. Orme. Officers: George Hough Perry, president, and Henry H. Creske, vice-president and treasurer. Principal office, 300 Madison avenue, New York City. To manufacture and sell rubber cushions, seats for furniture and automobiles, rubber mattresses, under Morley and Rigby patents, owned by Self-Controlled Air Cushion Company of Manchester, England.

THE DIAMOND SUSPENDER AND GARTER CO., May 13 (Delaware), $20,000, par value $100. Incorporators: F. R. Hansell, Philadelphia, Pennsylvania; E. M. MacFarland, Camden, New Jersey, and J. Vernon Pimm, Philadelphia, Pennsylvania. Principal office, with the Corporation Guarantee and Trust Company, 927 Market street, Wilmington, Delaware. To manufacture and deal in suspenders, garters, belts and other elastic articles and novelties.

HOLTON & HUNT, INC., July 17 (New York), 150 shares, par value $50, and 150 shares, no par value. Incorporators: James C. Holton, E. R. Holton, both of 501 West 111th street, and James J. Reynolds, 305 West 36th street, all of New York City. Principal office, New York City. Tires for autos, etc.

IVORYTONE PRODUCTS CORPORATION, July 23 (New York), $20,000. Incorporators: Lillian Shonceit, Abraham Springer, both of 75 Fort Washington avenue, and Hugo Manoville, 545 East 84th street, all of New York City. Principal office, New York City. Metal, rubber, paper.

KERNS TIRE STORES, INC., July 3 (New York), $75,000. Incorporators: Livingston Jenks, Robert M. Necket and Stuart Hedden, all of 43 Exchange Place, New York City. Principal Office, New York City. To deal in tires.

THE KERSHNELL TUBE AND RUBBER CO., INC., May 2 (Colorado), $50,000, 500 shares, par value $100. Incorporators: Clarence Antonio Kerkling, Eugene Walter Sharp and Joseph Gilbert Bushnell. Principal office, Denver, Colorado. To deal in tires, tubes and accessories.

H. R. MARTIN, INC., June 8 (New York), $15,000. Incorporators: H. R. Martin, 1022 Lake street, A. B. Austin, 718 Thompson street, and C. H. Gardner, 119 Sly street, all of Elmira, New York. To deal in tires.

THE STANDARD TIRE CO., June 6 (Massachusetts), $100,000. Officers and incorporators: Leon Goldstein, 27 Sonoma street, Roxbury, Massachusetts, president; Henry H. Herman, 35 Monument street, Medford, Massachusetts, treasurer; Lillian Goldstein, 27 Sonoma street, Roxbury, Massachusetts, clerk. To deal in automobile and other tires, rubber goods, automobile specialties of all kinds.

THE SURF-CAP CO., July 22 (Delaware), $100,000, par value $100. Incorporators: T. L. Croteau, A. L. Miller and M. A. Bruce, all of Wilmington, Delaware. Principal office with Corporation Trust Company of America, du Pont Building, Wilmington, Delaware. To manufacture a patent article known as "Surf-Cap."

General Sales Manager, General Division

Herbert E. Smith, who was recently appointed general sales manager of the general division of the United States Rubber Co., New York, N. Y., succeeding second vice-president George H. Mayo, who resigned as general sales manager, is a native son of California, having been born in San Jose in 1886 and educated at the University of California. It was in San Francisco, too, that he started as a salesman of Gorham-Revere, mechanical rubber goods. There he widened his activities until he was handling general accounts, including railroads, mines, steamship lines and the like. Later he also handled druggists' sundries, footwear, clothing and tires, thus acquiring a wide knowledge of the full line.

Herbert E. Smith

In 1915 he went to New York as a salesman for the United States Rubber Co. Two years later he was made assistant manager of the New York branch of the Revere Rubber Co. In 1918, when the consolidation of the various mechanical goods subsidiaries was effected, he became assistant to C. C. Case, general sales manager of the mechanical goods division, United States Rubber Co. In July of that year he was made manager of the New York City branch of the mechanical goods division.

The general sales activities of the company in the New York City territory (except tires) were consolidated in one branch in 1921, and Mr. Smith was made branch manager. Early last year he succeeded E. H. Huxley, resigned, as general manager of the United States Rubber Export Co., Ltd., and general manager of the export department of the United States Rubber Co. Mr. Smith is a member of the Lotus Club and the New York Athletic Club.

The Rubber Trade in the East and South

Production of tires and tubes during the past month was maintained at full capacity. The usual seasonal decline of output of these goods set in very gradually with the reduction by 5 to 10 per cent of the schedules for August. The peak of the tire consumption by car manufacturers came with their April record of automobile production. The lessened demand for original tire equipment is probably the main factor in the small and delayed seasonal curtailment. The output of balloon tires is being pressed to the full because of their increasing popularity with motorists.

Boot and shoe factories generally will suspend operation in August for the customary two weeks vacation and plan to resume capacity output in September.

Mechanical rubber goods factories are well supplied with orders due to active buying on the part of the railway companies, industrial and mining plants generally. Apparently the seasonal feature in connection with orders for garden hose is not in evidence this summer and heavy hose production is continuing straight through the season.

The heel and sole output is improving, relieved in part by better prices and the development of a quality sole in tan color perfected in the past couple years and now taking well.

Insulated wire mills have to figure with copper price conditions as well as high crude rubber prices but none-the-less are reported as operating well.

The Federated Motor Products Corporation, 250 West 54th street, New York, N. Y., which was organized July 26, 1924, and

capitalized at $20,000, is specializing in rubber and automotive products as well as importing scrap rubber. The officers of the concern are as follows: Herbert C. Schleicher, president and treasurer; J. B. Ballester, vice-president and secretary.

Under the name of Herron, Rodenbough & Meyer, a new organization of crude rubber dealers will open offices at 25 Beaver street, New York, N. Y.; Akron, Ohio; and 38 So. Dearborn street, Chicago, Illinois. The business was formerly conducted under the names of J. W. Herron & Co., J. S. Rodenbough & Co., and E. T. Meyer & Co.

O. W. Kracht, 29 Broadway, New York, N. Y., crude rubber broker, has taken over the local branch of Jaeger & Co., and will act as agent for foreign shippers of crude rubber and Far Eastern produce.

The National Tire Dealers' Association, Inc., 242 West 56th street, New York, N. Y., has sent to all its members a questionnaire, in order to find out the condition of dealers' stocks, as of June 30. George J. Burger is president.

Joseph A. McNulty, 114 Liberty street, New York, N. Y., importer of red oxide has returned from a visit to France and England. While abroad he arranged to import other compounding materials used by the rubber trade.

At the recent summer meeting of the Society of Automotive Engineers, held at White Sulphur Springs, Charles B. Whittelsey, president of the Hartford Rubber Works Co., Hartford, Connecticut, was re-elected treasurer.

Arthur L. Manley has been appointed manager of the branch maintained in New York City by The Miller Rubber Co., Akron, Ohio.

Samuel Woolner, Jr., has been elected president of the Kelly-Springfield Tire Co., 250 West 57th street, New York, N. Y., in place of Arnold L. Scheuer, resigned.

J. Edwin Davis has opened an office at 103 Park avenue, New York, N. Y., for the sale of mechanical rubber goods of standard and special qualities. Mr. Davis was formerly factory manager for a well-known rubber company and was in charge of the manufacture of its products. He has special facilities for supplying hose, belting, tubing, sheet rubber and specialties in qualities and constructions identical with those produced in the past under his direction.

Goldsmith-Astor Co., 433 Broome street, New York, N. Y., is a new concern dealing in rubberized fabrics and rubber specialties. A. Melville Astor, head of this concern, was formerly New York representative of F. S. Carr Co., Boston, Massachusetts.

P. Klein, a director of the Hungarian Rubber Goods Factory, Ltd., Budapest, Hungary, has returned home after a sojourn in this country of several weeks.

Charles E. Guest has been appointed general manager of the United States Rubber Export Co., Ltd., 1790 Broadway, New York, N. Y., succeeding Herbert E. Smith, now general sales manager of the general division of the United States Rubber Co. Mr. Guest is well qualified for his position, having 26 years experience in the export business, 10 of which were with the United States Rubber Export Co., Ltd., including three years as manager of the Manila and Shanghai branches of the export company.

The success of the first Chemical Equipment Exposition held June 22-27 in Providence, Rhode Island, has encouraged the officers and directors of the association to consider the preparation of data in connection with the holding of a second and similar exposition at some future time. A survey regarding exposition cities and buildings, available dates, etc., is soon to be made. G. O. Carter heads the Chemical Equipment Association, which maintains offices at 1328 Broadway, New York, N. Y.

Paul Elbogen & Co., Inc., importers and dealers in crude rubber, balata, and crêpe sole rubber, have removed their offices to 89 Broad street, New York, N. Y.

The plant of The Akron Pigment Co., McIntyre, Georgia, is now in operation, and producing "White Floss" clay, a material manufactured especially for the rubber trade. The plant is owned and controlled by The Thompson-Weinman Co., Cartersville, Georgia, while The Harshaw Fuller & Goodwin Co., 545 Hanna Building, Cleveland, Ohio, has been appointed sales agent.

J. C. Bridges has become manager of the Standard Rubber Co., Inc., 420 South 20th street, Birmingham, Alabama, an organization doing a wholesale and retail business in handling the products of the Star Rubber Co. exclusively.

Sale of New York Rubber Co.

The real property, plant, fixtures, machinery, water power, water rights, personal property and assets of all sorts other than cash, of the New York Rubber Co. will be sold at public auction, at the plant and premises of the company, Beacon, New York, on August 11, 1925, at 2 p. m.

The sale will be conducted under the direction of George H. Gage, of Beacon, New York, appointed by the United States District Court, Special Master for that purpose, to whom inquiries may be addressed for further information. The factory and contents are open for inspection by appointment with the Special Master.

The Rubber Trade in New Jersey

The Rubber Manufacturers' Association of New Jersey held its summer meeting and dinner at the Trenton Country Club, Trenton, in the early part of June. No important business was transacted because of the hot weather, but the rubber market in general was discussed. The next meeting of the Association will be held in September.

Increases aggregating about 10 per cent in the prices of tires and about 20 per cent in tubes, have been announced by several rubber manufacturing companies, including the Empire Rubber & Tire Corporation, Murray Rubber Co., and the Acme Rubber Manufacturing Co., all of Trenton, New Jersey. C. Edward Murray, Jr., president of the Murray Rubber Co., announced that this makes the fourth increase of about 10 per cent made by the Empire and Murray companies since the first of May.

The Combination Rubber Manufacturing Co., Trenton, New Jersey, reports that the past three months have been the largest in the history of the concern. The company has been obliged to refuse some orders because they could not be executed in specified time. The business of the company has been steadily increasing during the past year.

The Pierce-Roberts Rubber Co., Trenton, New Jersey, continues busy in turning out druggists' sundries. H. W. Roberts, secretary and treasurer of the concern, says he has enough orders on hand to keep busy until late in the fall.

J. Edward Myers, superintendent of the Acme Rubber Manufacturing Co., Trenton, New Jersey, has been elected president of the Hiltonia Community Association, an organization of property owners at Trenton devoted to civic improvement in the new section.

The United & Globe Rubber Co., Inc., Trenton, New Jersey, has been granted by the United States Patent Office at Washington, D. C., the trade mark, "Safety," as a name for inner tubes. The company claims to have used this mark since September, 1887.

Andrew J. Berrien, general manager of the William R. Thropp Sons Co., Trenton, New Jersey, who recently suffered a nervous breakdown has finally recovered after a rest of several weeks, and is attending to business as usual. Mr. Berrien is much interested in civic affairs.

William A. Howell, superintendent of the Whitehead Brothers Rubber Co., Trenton, New Jersey, served on the citizen's committee in charge of the celebration on July 4 at Trenton and read

the Declaration of Independence to the children at the Trenton Theatre.

Charles E. Stokes, head of the Home Rubber Co., Trenton, New Jersey, and family have been spending some time in the Pocono Mountains.

William T. Exton, head of the Samuel Cupples Co., St. Louis, Missouri, recently arrived in Trenton with his family and will spend the summer at Asbury Park, New Jersey. Mr. Exton, who is well known in the Trenton rubber industry, has been connected with the Cupples company for more than twelve years.

Emil Grafner and John Nahr have opened up the Yale Tire and Accessory shop at Warren and Lafayette streets, Trenton, N. J.

Mr. and Mrs. Horace B. Tobin have gone to their summer home at Spring Lake, New Jersey, and will sail next month for an extended tour through Europe. Mr. Tobin is vice-president and general manager of the Woven Steel Hose & Rubber Co., Trenton, New Jersey.

Milton Cohen, general sales manager of the Globe Rubber Tire Manufacturing Co., Trenton, New Jersey, has resigned. Mr. Cohen was connected with the Globe company for several years and served in France during the war. He is well known in the rubber industry.

The Pocono Rubber Cloth Co., Trenton, New Jersey, reports continued good business at this time, and an active demand for cloth for automobile tops, golf and tennis bags.

Business has increased during the past month at the plant of the Luzerne Rubber Company, Trenton, New Jersey. The concern manufactures hard rubber goods exclusively.

The Puritan Rubber Company, Trenton, New Jersey, is working on good sized orders for rubber tile and molded goods.

The Empire Tire Sales Co. has moved to larger quarters in the Empire Garage Building, Trenton, New Jersey. The company handles Empire Rubber Corporation products exclusively.

John B. Thompson, formerly connected with the Miller Rubber Co., is now covering New Jersey for The Star Rubber Co., Inc., Akron, Ohio. Mr. Thompson will operate out of the Star company's New York branch.

Charles Sortor, of Princeton, New Jersey, has been transferred by the Firestone Rubber Company, Akron, Ohio, to Mineola, New York, for a period of six months. Mr. Sortor, who is a graduate of President University, is doing educational work for the Firestone company on the uses and value of rubber.

The Rubber Trade in Rhode Island

Rubber manufacturing business throughout Rhode Island is in a somewhat anomalous condition, all being in operation, but few departments are at capacity. There is, however, a definite optimism that a good run will follow the summer period. Most of the plants have undergone the annual overhauling of boilers and machinery and are now ready for any increase in business that may occur. At present there is apparently the least encouragement among the footwear producers, weather conditions during the last couple of years not having been such as to stimulate the demand to such activity as to drive the plants to their normal output. The demand for druggists' sundries and novelties continues good, while there has been a dropping off in the output of mechanical goods.

With the granting of upwards of a score of interstate bus permits during the past month by the Rhode Island Public Utilities Commission, a total of more than 150 large motor buses are now operating between Providence and different sections of New England. Several of these lines are operated by the New England Transportation Co., a subsidiary of the New York, New Haven & Hartford Railroad, while the United Electric Railways Co., which operates the entire trolley system throughout the state has substituted buses on several suburban routes; and independent bus corporations and individuals are operating almost as many more on local runs. Supplying tires for the rapidly increasing number of motor buses and the steadily growing fleet of motor trucks engaged in passenger, freight, express and delivery transportation, which has already assumed astonishing proportions, will greatly increase tire business in these lines.

Providence, commercially designated as the "Southern gateway of New England" is well situated for the operation of large fleets of motor buses because of the industrial centers and the number of recreation resorts almost within its boundaries. Buses are now so numerous as to become a dominant factor in traffic movements.

"Automotive rubber," which is the Fountain street synonym for tires and tubes, increased 27 per cent July 1. Up and down "Tire street," as this Providence thoroughfare is referred to, tires and tubes were sold on the previous afternoon at the old price in considerable volume. Passed along with the price advance came the information that the "real reason" was a matter of international import. While a tire shifter changed rubber for a motorist or loaded his new shoes into the car he explained it. "You see," said he, "Great Britain controls the crude rubber production and Great Britain has to pay off her war debt. It has jacked up the tax on rubber so that the American owners of automobiles will pay Great Britain's bill to the United States." Big distributers here say that this abstract way of stating it is a fair sizing-up of the situation.

Seventy-five salesmen of the footwear division of the United States Rubber Co., with several officials from the New York offices, including George Schlosser, general manager of the footwear and miscellaneous division, and for several years manager of the plants in Rhode Island, arrived at Bristol on the morning of July 13 for a visit to the National India Rubber Co.'s factory. The forenoon was devoted to an inspection and study of the various departments after which luncheon was served at the Hotel Belvedere. In the afternoon a conference was held by the officials and salesman in the sun parlor of the hotel, when business conditions of the rubber footwear trade and the prospects for fall and winter trade were discussed.

John Henry Duffy celebrated his 87th birthday on July 6, at his home 326 Wood street, Bristol. Despite the fact that he is nearing his four score and ten years, he is an active employe of the National India Rubber Co., in its shipping department, where he has the distinction of being the oldest employe of the concern, both as to years and in point of service, having entered the company's service in 1866. He was born in Manchester, England, but came to this country with his parents when only ten years of age, and learned the making of rubber boots under the late Frank Flynn, when the business was first established at Bristol in 1866, and remained at this occupation for 26 years. He was then transferred to the shipping department where he has since remained. He has two sons, three daughters, eighteen grandchildren and six great grandchildren living.

The Alice Mill of the Woonsocket Rubber Co., Woonsocket, Rhode Island, and the company's Millville plant, at Millville, Massachusetts, resumed operations on July 14 after a shut-down of three weeks. The calender rooms in both plants began on the 14th, but the first day's making was not until Friday, July 17, when both plants were in full operation. It is understood that the prospects are good for steady employment for some months to come and the management express the hope that a full time schedule may be conducted throughout the winter. During the shut-down the entire plant was overhauled, boilers and machinery repaired and considerable new equipment added. The two plants employ approximately 2,000 operatives in their several departments.

A. L. Gardiner, office manager of the Columbia Narrow Fabric

Co., Shannock, Rhode Island, was in Chicago last month on business. The company's band is growing in popularity and has given some fine concerts this season. The Columbia company has enjoyed a continued period of steady work for a number of months and its weekly shipments of specialized coverings for automobile tops to Detroit have been constantly increasing.

At a recent meeting of the Pawtucket Rotary Club, held at the rooms of the Pawtucket Business Men's Association, Pawtucket, Rhode Island, Robert C. Moeller, manager of the Collier Insulated Wire Co., of that city, gave a brief address on the manufacture of insulated wire products and the scope of that business in Rhode Island. The address was especially interesting and instructive and the facts presented proved a revelation to the listeners. The speaker intimated that Rhode Island boasts the finest insulated wire manufacturing business in the world and that close to one-tenth of the total output in this particular industry is from Rhode Island.

The report of Stephen W. Bourn, a stockholder and creditor of the Bourn Rubber Co., Providence, Rhode Island, filed as receiver of that concern his petition for instructions whether to accept an offer for the property or to sell at public auction. The hearing will be in the Superior Court on August 18 at 9:30 a. m.

The rebuilding of tires by the G. & G. Tire Co., has been started in the Lyric building on Richards avenue, North Attleboro, by Frank H. Gilbert and Albert Graur, Jr., where a model plant with all necessary equipment has been installed.

Salesmen of the Davol Rubber Co., Providence, Rhode Island, from all over the country, together with the officials of the concern, held their annual conference at the concern's plant during the first week in July, going over the two plants both of which have been materially increased during the past year, as well as rearranged in the several departments. On July 2 the entire party went by automobiles to the Highland House, Narragansett Pier, where dinner and an outing was held.

The Smithfield Town Council has recently purchased from the Combination Ladder Co., of Providence, Rhode Island, 1,500 feet of fire hose at $1 per foot.

The Rubber Trade in Massachusetts

Although this is the dull between-season period for rubber footwear, the summer shut-downs this year promise to be no longer than are necessary for the usual vacation period and plant overhauling. Operations on a five-day weekly basis will generally be resumed soon with every indication of good autumn business. Heel manufacturers, thanks to the repair and jobbing trades, are optimistic despite tremendous competition.

Tire plants are running practically at capacity, the proportion of balloon tire output increasing rapidly. Motor car production continues at a high rate, and replenishing low manufacturers' and dealers' tire stocks has long delayed the usual seasonal curtailment of tire production. Automobile topping demand continues in fair volume.

Mechanical rubber goods and insulated wire mills are fairly active despite advancing prices, and much the same may be said of druggists' sundries and weatherproof clothing for the autumn trade.

The reclaiming branch of the rubber industry is beginning to experience a period of prosperity as a result of rapidly advancing crude rubber prices, which are reflected in the stiffening quotations for reclaim.

A. E. Gonyea, formerly connected successively with the Dayton and Ajax organizations, is now New England representative of the Star Rubber Co., Inc., Akron, Ohio.

The Taunton Rubber Co., Taunton, Massachusetts, manufacturing three types of rubber heels and a general line of molded goods, has been running its factory night and day for the past eight years. Operations at capacity are now being maintained, while prospects for the future are excellent. J. Gifford is treasurer.

The stockholders of the Hood Rubber Co., Watertown, have authorized an increase of $500,000 in the capitalization of the company to provide an issue of employes' special stock with special preferences, voting powers, restrictions and qualifications.

The George S. Colton Elastic Web Co., Easthampton, Massachusetts, manufacturer of corset gorings, surgical webbings, cords, braids, etc., is enlarging its plant by the construction of a one-story addition, the new building being planned to relieve cramped conditions in the office and shipping departments. C. A. Richmond is treasurer.

Among the new tire dealers of Greater Boston may be mentioned the Chelsea Auto Tire Co., 16B Everett avenue, Chelsea.

Two new concerns of interest to the rubber trade have recently been incorporated under the laws of Massachusetts. They are as follows: Beverley Rubber Co., Boston, capital 1,000 shares of no-par common stock. Incorporators, William M. Floring, Brighton; Lincoln S. Monaghan, East Braintree; George Perley Nicholl, Foxboro. Beverley Manufacturing Co., Boston, capital 1,000 shares of no par-common stock. Incorporators, Frederick J. Gleason, Cambridge; Max Brown, Boston; George F. Kerr, Newton.

Crude Rubber Conference in Boston

At the initiative of Quincy Tucker, formerly a rubber planter in British Guiana, a crude rubber conference was held June 25 at the Boston Yacht Club. Officers of the United Fruit Co. and of a dozen rubber companies within twenty miles of Boston attended.

Mr. Tucker outlined the purpose of the conference and suggested that the rubber exposition idea should be revived as the logical plan to follow up the work of the government rubber survey. He then introduced Edgar B. Davis, the guest of honor, as the real American pioneer of American owned plantations, due to his connection with the plantation of the United States Rubber Co. in Sumatra.

Mr. Davis believes that Sumatra seems to be the choicest location for American owned plantations, but that from a military standpoint we need an emergency supply in the western tropics. Brazil, Mr. Davis told the director of tropical research of the United Fruit Co., is suitable for rubber growing provided the Chinese coolie labor is forthcoming, which latter point is not yet settled.

Rubber Statistics of Massachusetts

According to the annual report on the statistics of manufactures in Massachusetts for the year 1921, just published by the Department of Labor and Industries, 8 establishments, employing an average of 9,347 operatives working an average of 250.5 days and earning an average of $948.85 yearly, consumed stock and materials costing $11,544,473, to produce rubber boots and shoes valued at $36,700,126. In addition, other rubber goods to the value of $28,786,812 were manufactured from stock and materials costing $16,269,019 by 52 establishments employing an average of 5,024 operatives working an average of 247.8 days and earning an average of $1,058.13 yearly.

In metropolitan Boston, a district which embraces 14 cities and 26 towns within a radius of approximately fifteen miles, 5 establishments employing an average of 8,347 operatives earning an average of $957.89 yearly, consumed stock and materials costing $10,516,469 to produce rubber boots and shoes valued at $33,627,151. In addition, other rubber goods to the value of $28,999,996 were manufactured from stock and materials costing $14,937,733 by 27 establishments employing an average of 3,954 operatives earning an average of $1,055.02 yearly.

Exports of rubber goods, including rubber tires and inner tubes, by 17 concerns totaled $1,375,003, compared with $2,248,118 by 11 concerns in 1919 and $57,746 by 8 concerns in 1914.

Akron's Centennial Celebration

The Parade

THE rubber industry, of which this city is a world center, played the leading part in the celebration of Akron's 100th anniversary during the week of July 19-23. An entire division of the mammoth parade, which ushered in the week's festivities, was devoted to the rubber companies and their activities. It was a colorful, moving pageant, depicting the progress of the industry since it was started here fifty-five years ago. There were floats, elaborately decorated, representing the Firestone, Goodrich, Goodyear, Miller, General, Seiberling, Kelly-Springfield, Mohawk, Swinehart, Lambert, and smaller rubber corporations.

A company of old time firemen, with a hand pump, led the division. The ancient apparatus was equipped with rubber hose, the first product manufactured in The B. F. Goodrich Co. factory when it was founded by Dr. B. F. Goodrich in 1870.

Next was an old-time carriage, equipped with the first solid rubber tires, built in 1886. This was followed by the first pneumatic tire, which supplanted solids in 1897. The climax in the series was a large Silvertown pneumatic airplane balloon tire, mounted on a beautiful float, at the front of which was the "Queen" and her court.

The Firestone Tire & Rubber Co., entered an elaborate float which displayed on huge banners the slogan, "Americans should grow their own rubber." It represented a typical scene on a Firestone plantation in Liberia, where Harvey S. Firestone, president of the company, is beginning to start rubber growing operations on a large scale. Barefoot natives of the African republic went through the motions of gathering latex from imitation rubber trees, in the shadow of their thatched huts. Other Firestone displays were an old carriage, equipped with the solid tires which the company first started manufacturing in 1900, and the automobile, with Firestone balloons, which won the Indianapolis race this year. It was a striking picture of the progress made in tire manufacturing during the past twenty-five years. It may be noted in passing that the Firestone company will be 25 years old August 4, and is celebrating its founding at the same time with Akron's centennial celebration.

The Goodyear Tire & Rubber Co's. float was a miniature Zeppelin, an exact replica of the huge Leviathan of the air, twice as large as the Los Angeles, that the company is now building. Goodyear is a pioneer in airship development, and recently completed an air yacht, of 60 horse power capacity, which, it is believed, will soon come into general use. The tiny craft has been christened "The Pilgrim."

The Miller Rubber Co's. float showed a bevy of bathing beauties clad in attractive bathing suits and wearing rubber caps and slippers made by the company. This float, said to be the largest in the parade, weighed 10 tons and stood nearly 15 feet high. Included was a specially constructed tank containing 4500 gallons of water into which the girls dived, when not promenading on the "beach."

In the night parade a lighthouse was erected on the float and light from its beacon flooded the scene. A complete power plant and pumping unit were included in the float. Water continuously ran over the sides where it was caught in a concealed trough and pumped into the tank.

Although among the newer companies, the General Tire & Rubber Co. was represented in the parade with a very attractive float.

There were in all 400 floats in the big parade, with 5,000 persons marching. Nearly 200,000 people watched the parade, which required three hours to pass a given point. It was the biggest event ever staged in Akron.

The Centennial Industrial Exposition

Mayor D. C. Rybolt formally opened the Centennial Industrial Exposition at the armory on High street in the evening. He paid tribute to General Simon E. Perkins, Dr. Benjamin F. Goodrich and other pioneers, whose far-sighted vision was responsible for Akron's founding and rapid growth from a small village to a thriving city of 200,000 souls. James G. Robertson, president of the Chamber of Commerce, which sponsored the exposition, outlined in an address the development of the city's industries.

The city's phenomenal growth in the last half century and its future prospects are linked inseparably with the rubber manufacturing business. Besides a daily output in excess of 100,000 tires and 150,000 inner tubes, the huge factories here manufacture 30,000 different varieties of rubber articles, from the tiniest rubber bands and washers to massive rubberized silken hulls of the big Zeppelin airships. Into the massive rolls of the giant machines in the factories are fed more than 150,000 tons of crude rubber and 300,000 bales of cotton annually, in addition to thousands of tons of chemicals and other supplies. With the dawn of the rubber age, Akron has grown from a struggling village to the mighty city of industry it is today.

Visible evidence of Akron's industrial greatness was revealed in hundreds of manufactured products that were on display in the armory. Surrounding King Rubber, whose products have made the city world famous, were grouped a varied line of articles, ranging from fishing tackle and paper boxes to big trucks and boilers. Visitors passed through a triumphal arch of tall wooden columns, draped with streamers of green and white. Grouped about the gaily decorated booths were fern filled jars, which blended into the attractive color scheme.

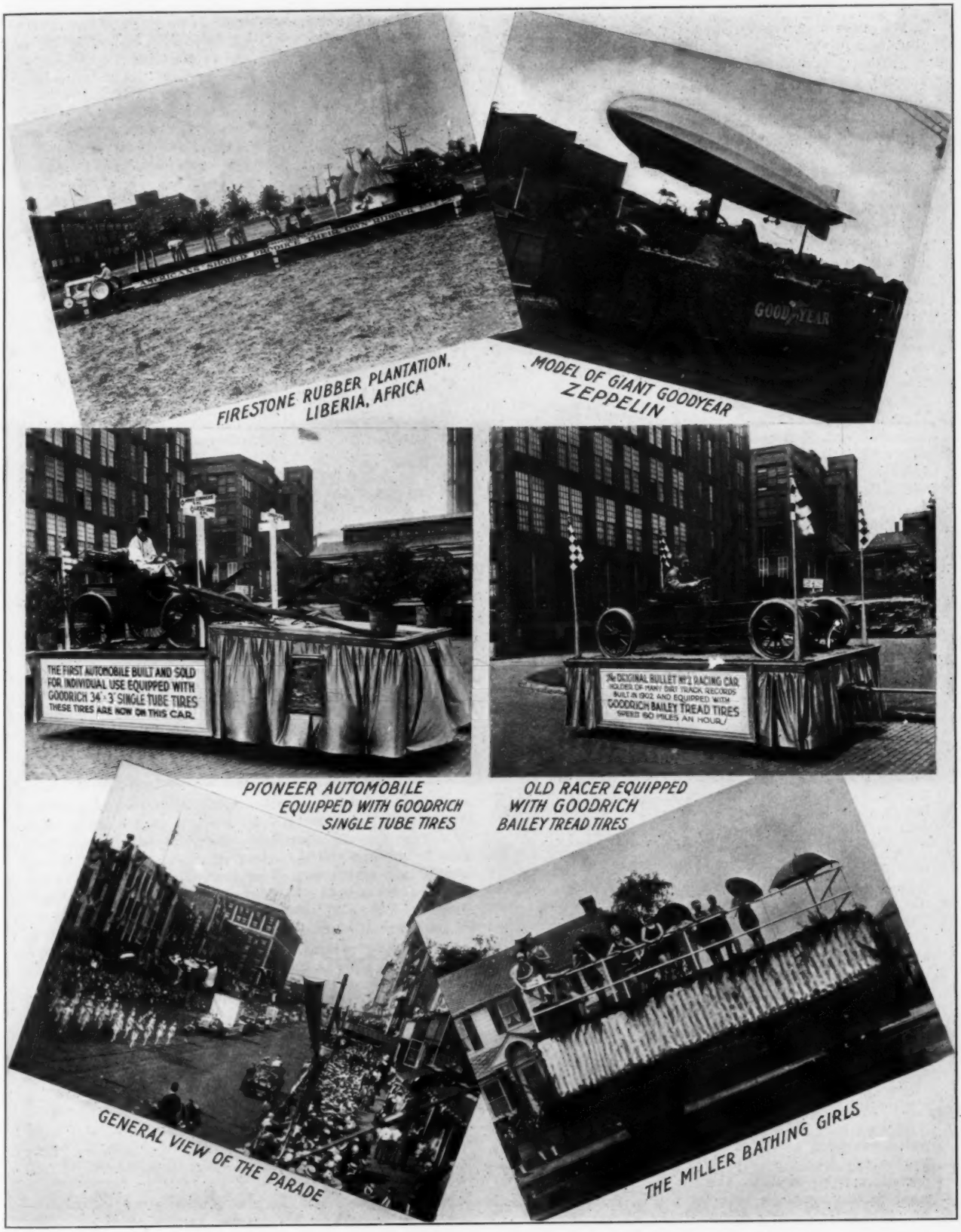
Holding the center of interest was an elaborate display of every variety of raw material entering into the manufacture of automobile tires and other rubber products, of which this city produces more than half the world's supply. Cotton machinery turned out samples of the thousands of tons of fabric used by the local factories. A typical plantation scene showed how barefooted natives in the tropics gather the rubber latex which feeds the giant rubber manufacturing machines. Visitors were also given a glimpse of some of the modern machinery which produces more than 100,000 automobile tires, and a million other rubber articles in a day. The four larger rubber companies, Goodyear, Goodrich, Firestone and Miller, combined in furnishing this display.

Models of the Leviathans of the air which are being built here were exhibited by the Goodyear Tire & Rubber Co. Nearby is the 75,000,000th tire which was built last week at the Goodyear plant.

The B. F. Goodrich Co. had one of the largest displays, showing a few of the 30,000 different articles made in its plant which comprices sixty buildings with 140 acres of floor space. Tires, tubes, accessories, rubber footwear, and mechanical goods were exhibited.

Firestone and Miller rubber companies had attractive displays of tires and other products manufactured in their plants. The Seiberling Rubber Co. has a complete showing of tires and tubes. Large tires are displayed by the General Tire & Rubber Co. Other rubber companies having exhibits were the India, Mohawk, Lambert, Kelly-Springfield and American.

With sixty-six companies represented, it was the most complete exposition of the city's many products ever arranged under one roof. Musical programs and radio broadcasting programs were the features each day of the exposition which was open day and night during centennial week.


FIRESTONE RUBBER PLANTATION, LIBERIA, AFRICA
MODEL OF GIANT GOODYEAR ZEPPELIN
GOODYEAR
THE FIRST AUTOMOBILE BUILT AND SOLD FOR INDIVIDUAL USE EQUIPPED WITH GOODRICH 34 × 3 SINGLE TUBE TIRES
THESE TIRES ARE NOW ON THIS CAR.
THE ORIGINAL BULLET NO. 2 RACING CAR
HOLDER OF MANY DIRT TRACK RECORDS
BUILT IN 1902 AND EQUIPPED WITH
GOODRICH BAILEY TREAD TIRES
SPEED 60 MILES AN HOUR!
PIONEER AUTOMOBILE EQUIPPED WITH GOODRICH SINGLE TUBE TIRES
OLD RACER EQUIPPED WITH GOODRICH BAILEY TREAD TIRES
GENERAL VIEW OF THE PARADE
THE MILLER BATHING GIRLS

RUBBER COMPANY FLOATS AND GENERAL VIEW OF THE PARADE CELEBRATING AKRON'S CENTENNIAL.

The Rubber Trade in Ohio

The rubber manufacturing business in Ohio is beginning to feel the effects of the shortage and high prices of crude rubber, and foresighted manufacturers are already taking steps to meet the changed conditions in the industry. Although rubber is now around $1.15 a pound, at the highest point touched in the last six years, authorities here believe the top of the upward trend has not yet been reached. A further rise is anticipated in the coming month.

Besides raising the price of automobile tires and other rubber products, the manufacturers are striving to effect still further economies in production methods and overhead expenses. Crude rubber has climbed so rapidly since the first of the year that the rubber companies have not been able to adjust prices of their finished products fast enough to keep pace with increased raw material costs.

Executives of the leading concerns say that a considerable part of the increased rubber cost is being absorbed by them, instead of it all being passed on to the consumers. They point out that tire and tube prices are not much higher than the price levels of a year ago, and average from 40 to 60 per cent less than those prevailing in 1920.

A general cost survey shows that the automobile tire today is about the only commodity the public can buy for less money than before the war. Taking into consideration the increased mileage of the 1925 tire, it may be said that tire prices are lowest in history.

Some of the big Akron manufacturers have large profits on future contracts and on rubber purchased eight and nine months ago. In figuring manufacturing costs, however, an average is taken between the actual cost of rubber and cost of the raw material at current prices. Under this system, it is doubtful if the rubber companies will show as large profits during the last half of the year, as during the first six months.

Production is bound to be less, in the opinion of most observers, for the reason that dealers have become heavily stocked during the past two months. Both jobbers and retailers have speculated in tire stocks so they might take advantage of future sales at high prices. The unusually heavy orders from dealers have kept tire production at the peak longer than has been the rule during the summer season. Demand is bound to let up soon, it is believed, as the motoring season draws to a close, and with spring dating abolished.

Sales volume of rubber products in Ohio during the first six months of the year has surpassed any previous period in the history of the industry. The most optimistic predictions of record sales in 1925 apparently were not over estimated.

The B. F. Goodrich Co., Akron, Ohio, is preparing for another big year in the rubber footwear business. A sudden heavy demand for footwear caught the factory unprepared last year, and it was some time before production could catch up with orders. The company is rushing work on a six-story warehouse building which will provide storage space for surplus stocks of rubber boots, shoes and heels. Work has been started on a second story addition to Goodrich building No. 6, to cost $56,000.

The Mohawk Rubber Co., Akron, Ohio, is now manufacturing between 1,200 and 1,400 tires a day, while the output of tubes is being gradually advanced to 2,000 a day. This represents an increase in production over a similar period of last year of more than 100 per cent. Sales for the first six months of this year also show a gain over last year of 85 per cent. H. H. McCloskey is secretary.

An increase in dollars of 71 per cent and in units of 46 per cent is announced by the India Tire & Rubber Co., Akron, Ohio, for the first four months of 1925 as compared with the corresponding period of 1924. There is said to be an especial demand for the company's heavy duty tires, the output of such tires having been exactly doubled during the past month.

Moore & Munger, 33 Rector street, New York, N. Y., specializing in imported and domestic clays for the rubber industry, have appointed E. J. Samuel as Akron, Ohio, representative, with offices at 736 Second National Building, Akron. Mr. Samuel, who is especially interested in the company's Catalpo department, was formerly connected for several years with the Goodyear organization, later becoming associated with the Ajax company.

E. J. Samuel

Operations at capacity are being maintained at the plant of the Marathon Rubber Co., Inc., Akron, Ohio, where both high pressure and balloon tires are being produced. W. E. Cameron has been recently appointed the company's special representative. C. C. Osmun is president.

C. C. Crial is now chief engineer and field representative of The Franz Foundry & Machine Co., Akron, Ohio, manufacturer of molds, cores, and rubber machinery. Mr. Crial had previously held positions of responsibility with the Goodrich organization, and later with the Akron Rubber Mold & Machine Co., and the Reynolds Machine Co.

Executives of the General Tire & Rubber Co., Akron, Ohio, report a substantial growth of business and state that their factory capacity has been increased 50 per cent within a year.

R. N. Gattshall, formerly associated with The Republic Rubber Co., Youngstown, Ohio, as assistant manager of mechanical sales, has been appointed by that organization as advertising manager of its mechanical goods division.

The Aetna Rubber Co., 811-815 East 79th street, Cleveland, Ohio, manufactures a large line of both soft and hard rubber goods, specializing in rubber parts for storage battery manufacturers.

Operations at the plant of The Victor Rubber Co., Springfield, Ohio, were approximately 60 per cent greater during the second quarter of 1925 than for the first three months, and prospects are continuing to improve. The company manufactures tires, tubes, and rubber mats and matting. H. H. Durr is president.

Firestone Plans Rubber Growing Industry

Harvey S. Firestone, president of the Firestone Tire & Rubber Co., Akron, Ohio, predicted in an address at the Centennial Industrial Exposition that some time in the near future Akron will not only be the center of the rubber manufacturing world, but will also be headquarters of the rubber growing industry of America. This may be brought about through the formation of a gigantic corporation designed to grow rubber in foreign countries and financed by American capital. Plans call for the headquarters of this corporation to be in Akron. The project is now under discussion by the leading manufacturers of the country, but no definite plans have been arranged, he said.

Mr. Firestone praised Dr. B. F. Goodrich whose foresight and business integrity laid the foundation for the rubber industry in Akron. The B. F. Goodrich Co. stands as a monument to his pioneer work.

With more than 17,600,000 motor cars now registered, even the most pessimistic can no longer talk about the saturation point in the automotive industry, asserted Mr. Firestone.

"While this indicates the stable and established position which the rubber industry has reached, we are faced with one of the most dangerous problems ever encountered—the assurance of sufficient supplies of rubber.

"It is the British restriction upon production and exportation of rubber, coupled with the fact that there has been practically no new

planting of rubber trees during the past four years, that has brought on the crisis the rubber industry now is facing.

"It is estimated by the National Automobile Chamber of Commerce that one million and a half more planted acres are needed, if the supply is to meet the demand within the next few years. As a result rubber is selling today at $1.20 per pound, as compared with 17 cents a year ago.

"Americans should produce their own rubber. There are millions of acres available in various parts of the world where the supply would be practically under our own control and protection.

"It will be one of the most profitable investments American capital can make, as will be shown by the fact that rubber is being produced on many plantations at 10 cents and less per pound, and the average cost is less than 15 cents."

P. W. Litchfield Completes Twenty-Fifth Year with Goodyear

On the morning of July 15 the whistles at the factory of the Goodyear Tire & Rubber Co., Akron, Ohio, blew twenty-five times in order to mark the completion of twenty-five years of service with the company by P. W. Litchfield, vice-president and general manager.

Mr. Litchfield came to the company when it was less than a year and a half old and directed the construction of Goodyear's first automobile tire. During the first week of July this year the 75,000,000th tire built by Goodyear under his direction was turned out—the largest production made by one company, and by far the largest production under the direction of any single man.

Paul W. Litchfield

A banquet was held in Goodyear hall in celebration of this event and also to honor Mr. Litchfield, on completion of twenty-five years service. President G. M. Stadelman presented him with a diamond service pin, and E. H. Koken, general superintendent of the Canadian factory, presented a large silver loving cup, in behalf of the men in the Toronto plant. Mr. Litchfield announced at the same time a gift of $25,000 from himself to the welfare committee of the Goodyear Industrial Assembly, an organization of employes. The money will be used in rewarding men who are recognized as having given meritorious service to the company.

Many advances in the automotive industry are accredited to Mr. Litchfield, while much of his company's prominence in aeronautics, industrial relations, educational programs, etc., is due to his suggestions, knowledge, and careful planning. Mr. Litchfield is just fifty years of age. He was graduated from the Massachusetts Institute of Technology in 1896 and joined the Goodyear organization four years later.

General Tire Warns Dealers Against Overstocks

The General Tire & Rubber Co., Akron, Ohio, has sent word to its dealers throughout the country, warning them against overstocking with tires now that prices are rising. Dealers are given to understand that if they buy more tires now than are needed for normal requirements, they will force the manufacturers to buy rubber at a high price, while the distributers will also as a result automatically raise prices on themselves and the public.

This is the third warning the General company has issued in a very few years, such action having taken place in the present instance because of the advance in the price of crude rubber, which has risen from 18 cents to more than $1.15 a pound in less than a year.

Decision Affirmed in Firestone-Universal Case

On July 2 affirmation of the decision that the Firestone Tire & Rubber Co. and the Firestone Steel Products Co. were not guilty of infringing on a one-piece demountable auto wheel rim of the bolt type, patent on which was owned by the Universal Rim Co. of Chicago, was handed down by the United States Circuit Court of Appeals at Cincinnati, Ohio. A former decision favoring the Firestone organizations was rendered during April, 1923, the Chicago concern then appealing the case.

Changes in Henderson Co.'s Sales Personnel

R. B. Tracy, eastern sales manager for the Henderson Tire & Rubber Co., Columbus, Ohio, has appointed the following salesmen: Albert Braunworth, formerly with the Federal Tire & Rubber Co., will be stationed at New York City; S. Pollner will cover Greater New York, while M. M. Pollner will have New York State as his territory. J. A. Lawrence, formerly with the Miller organization, will cover New Jersey, and H. A. Langmaid the states of Maine, Vermont, and New Hampshire. George F. O'Brien, formerly assistant advertising manager of the Michelin Tire Co., is now associated with the Henderson Company.

The Rubber Trade in the Midwest

J. J. Coburn, for the past seven years connected with the Firestone organization, is now branch manager at Kansas City for the India Tire & Rubber Co., Akron, Ohio.

The Johnstone Tire & Rubber Co., Laporte, Indiana, has been running for some time on a schedule of twenty-four hours a day, and will further increase output, having recently installed additional machinery. The company makes a full line of both cord and balloon tires, truck and bus tires, as well as three types of inner tubes. Sales of truck and bus tires have increased during the season about 500 per cent. Walter T. Welsh has been made district sales manager for the state of Michigan, while A. A. Powell will act in a similar capacity for the state of Indiana.

It is reported that H. D. Reichard has resigned his position as chief engineer of the Akron Standard Mold Co., in order to accept a position as development engineer with the Racine Horseshoe Tire & Rubber Co., Racine, Wisconsin. Mr. Reichard was formerly connected with the Goodrich and later the Swinehart rubber companies.

The Reliance Whiting Co., Alton, Illinois, manufacturer of air-floated, water-ground and water-floated whiting, has increased its capital stock to $200,000.

Gillette Tire & Rubber Co., Eau Claire, Wisconsin, has changed its name to the Gillette Rubber Co., increasing the capital stock and adding two directors. The capital stock is changed from 500 shares no par value, to 50,000 shares of preferred at $15 par and 100,000 shares of common at $5.40 par, making an aggregate capitalization of $1,290,000. Charles H. Chapman is president and J. Sheahan is secretary.

The Rubber Trade on the Pacific Coast

One of the best selling points used by rubber manufacturers on the Pacific Coast—that of lower cost on crude rubber because of being nearer the source of supply than mid-western or eastern manufacturers—has lost much of its force. Rubber manufacturers here are anxious about the rapid rise in price and scarcity of raw stock. The inability to meet the price and also to secure a moderate reserve supply may result in closing several more of the smaller shops, the owners of which have been unable or afraid to raise prices as the larger manufacturers have done. Many buyers tell them that if they increase prices, preference of ultimate purchasers will be for the nationally-advertised goods.

Tire manufacturers and distributers have passed on the increase to consumers quite readily, and some say that buyers have even been eager to take more casings and tubes than usual, being convinced that a further rise is more likely than a decline in the price of rubber. Three increases in price within three months have thus been passed forward by several of the larger tire concerns, and it is believed that another pending rise will be as easily absorbed by the trade. A good argument used also is the danger of a real shortage of rubber and the difficulty of making later deliveries even at higher prices. This is impressive in view of the largely increased automobile and motor truck registration in all the states west of the Rockies.

Trade in mechanical rubber goods generally is excellent. Without exception, manufacturers of heavy hose, belting, and various pump packings used in the oil fields report a steady, and in most cases an increasing demand. Despite dearer rubber, there has been a big jump in the output of tire repair material in the past few weeks, credit being given to "more cars, dearer tires, and warmer weather." Reclaimed rubber dealers report a brisk demand for stocks.

The Goodyear Tire & Rubber Company of California has been breaking all production records at the Los Angeles plant, the mid-July output averaging over 6,000 casings and 6,500 tubes daily. Sales for June eclipsed those of any month in the company's history, and July sales are expected to be even higher. The company is reported as having a large reserve of crude rubber in stock and under contract for future delivery. The regular quarterly dividend of $1.75 and a deferred dividend of $1.75 were paid on the preferred stock July 1. The Goodyear Textile Mills Co., which makes fabric for the tire plant, also paid $1.75 on the same date as regular quarterly dividend on its preferred stock.

Operating one of the newest and most up-to-date plants in the West, the Keaton Tire & Rubber Co., 17th and Kansas streets, San Francisco, reports an excellent increase in sales of casings and tubes during the past month, and the factory is being operated on full capacity. Several more distributers were added during July to the company list. Robert H. Keaton is president.

C. B. Raymond, vice-president of the B. F. Goodrich Rubber Co., of Akron, Ohio, suffered considerable loss through the recent earthquake in the Santa Barbara district. His fine home in Montecito was severely shaken, but fortunately the occupants escaped injury. One of the Goodrich tire sales branches, the Diamond Rubber Co. office and stockroom on State street, was much damaged, the entire front of the building being entirely destroyed.

The production of golf balls, for which there is a rapidly-widening market west of the Rockies, is now being carried on by

The Pacific Golf Ball Co., Los Angeles, California

the Pacific Golf Ball Co. at 50th street and Loma Vista avenue, Los Angeles, California. It is the first company west of Chicago that has made golf balls on a commercial scale. Much of the machinery, particularly the elastic thread winding apparatus, was made especially for the company in Europe. Harry A. E. Paublach is president, William C. Peters is vice president and treasurer, and F. M. Peters is secretary.

A well-sustained demand for heavy transmission and conveying belting, as well as placer mining belting, fire, oil, steam, sandblast, and airbrake hose, as well as various mechanical rubber goods, is reported by the American Rubber Manufacturing Co., Park avenue and Watt street, Oakland. N. S. Dodge is president.

Heavily-armored large-caliber rotary hose for the oil fields, and tested to 1,500 lbs. pressure, is being made in rapidly-increasing quantities by the West American Rubber Co., 400-432 North avenue 19, Los Angeles, to fill orders from the larger petroleum companies in California, Texas, Oklahoma, and Europe. The equipment of the plant has recently been much improved to provide for an augmented production of radiator hose, pump packings, and general mechanicals. Douglas R. Radford, the president of the company, is also commodore of the Los Angeles Yacht Club.

Douglas R. Radford

A new rubber concern being formed in Los Angeles, California, is the Rajite Products Co., which will take over the business now being carried on by the Coraja Rubber Co., of which Ralph I. Guy is president, at 4502 Melrose avenue. The capital will be $150,000, and the line of goods will include tire and tube repair material, automobile tops, and various rubber specialties. The Coraja shop at the same address is now being operated night and day. The parent Coraja plant is located in Dallas, Texas.

S. G. Carkhuff, secretary of the Firestone Tire & Rubber Co., Akron, Ohio, has been on the Coast lately studying trade conditions from Seattle to San Diego, and he reports the outlook as most encouraging.

J. H. Stedman, president of the Stedman Rubber Products Co., South Braintree, Massachusetts, who, with Mrs. Stedman and his daughter, has been touring through the coast states, has returned East. He was much impressed with the market opportunities on the Coast for various rubber goods, and especially for flooring material and high class reclaim stock.

A double shift has been operating daily for the past three months at the shop of the Paragon Rubber Co., 4827 Huntington Drive, Los Angeles, California, and of which H. G. Cogswell is president. The company has just installed another large hydraulic press, besides other equipment. Tire material is reported as going strong, as well as various mechanical rubber goods.

Harry L. Carobett, divisional sales manager, and J. B. Mills, advertising manager of the India Tire & Rubber Co., Akron, Ohio, the latter one of the "old vets" of the Diamond Rubber Co., have been recent visitors on the Coast.

The Eno Rubber Corporation, 1026-1032 S. Los Angeles street, Los Angeles, California, is reported by President Roy L. Musser as busier than ever turning out oil well supplies, tire repair stock, general mechanicals, and other miscellaneous goods. The company does a large business in rubber specialties.

Continuing to run its plant at capacity, and on a schedule of 24 hours a day, 7 days a week, The Spreckels "Savage" Tire Co., San Diego, California, is also installing new machinery, in the expectation of producing 2,000 tires a day by August 1. The company also reports that during the past year it has practically re-equipped the plant with new calenders, mixing mills, curing equipment, tire molds, etc. Should sales continue to increase during the next six months as rapidly as they have been doing the daily output of the plant by January 1 will be 3,000 tires and 5,000 tubes. Landis D. McConnell is general manager.

National Foreign Trade Council Discusses Rubber Problems

At the twelfth annual convention of the National Foreign Trade Council, held recently in Seattle, Washington, the problem of a rubber supply for America was discussed. Commercial attachés of the United States in the Orient pointed out that Great Britain has a retention in regard to rubber production in the South Pacific, and delegates made the charge that through this control England is funding its war debt to America.

Ernest L. Harris, American consul-general recently stationed at Singapore, made the statement that the very heart of the British policy was the opportunity of securing cheap labor. "Before estate rubber can be grown in any other part of the world, conditions must be produced similar to those which obtain in Malaya."

Congress should take immediate steps to remove restrictions against private capital developing great areas of rubber lands in the Philippine Islands, thus assuring a sufficient crop of this product for American needs and at the same time creating a vast foreign trade between the two countries, Judge J. W. Hausserman of Manila, vice-president of the American Chamber of Commerce, also told the convention.

The Rubber Trade in Canada

Owing to the scarcity and high cost of crude rubber, Canadian prices on all styles and sizes of tires and tubes have again been advanced. The advance has been about three per cent on small tires, and approximately eight per cent on the larger sizes, while tubes are from three to five per cent higher. The market is decidedly strong, and tire dealers report particularly good sales which will be broadened by the increasing number of car owners. Balloon tires are in demand for replacements, but this particular line is somewhat unsatisfactory because of the number of service stations that exchange used cord tires for balloons. Bathing caps and shoes have been in good demand, and with the growing interest in lawn tennis in Quebec province sales of crêpe soled athletic footwear are increasing. The call for rubber jar rings points to satisfactory sales as the season advances. Construction and building reports show a most encouraging outlook for insulated wire and mechanical goods.

Due to the increasing cost of rubber, tire casings were advanced 10 per cent and tubes 15 per cent on July 20. Prices were advanced generally on other rubber goods.

Plans for the expansion and development of Goodrich and Ames Holden rubber products have been recently completed. The B. F. Goodrich Rubber Co., Ltd., Kitchener, Ontario, Canada, is now the sales company with separate warehousing facilities, while the manufacturing company now known as The Canadian Goodrich Rubber Co., Ltd., also at Kitchener, Ontario, produces tires, footwear, etc. The sales company is also planning distribution of the Ames Holden product, and warehouses under the direction of the new company are being maintained with complete stocks at important centers throughout Canada.

Sales are under the direction of A. Koehler who is assisted by C. W. Boyer, and R. A. Gunther. The Goodrich branch managers are as follows: Montreal, Quebec, F. H. Stafford; Winnipeg, Manitoba, A. A. Frew; Vancouver, B. C., G. R. Donaldson; and Toronto, Ontaria, W. H. McLean.

In addition to the regular quarterly dividends on the prior preference and preferred stock of the Goodyear Tire & Rubber Co., of Canada, Ltd., Toronto, Canada, for the second quarter of the year, an additional 1¾ per cent was declared to apply on the preferred, bringing arrears down to 5½ per cent. Vice-President and General Manager C. H. Carlisle has made the following statement to shareholders: "Prices remain exceptionally low in all lines of our products. Both plants are at the maximum production. Our output for the nine months of our fiscal year has been the greatest in the history of the company. Our net profits for the nine months exceed those for the same period a year ago."

K. & S. Tire & Rubber Goods, Ltd., Toronto, Canada, reports net earnings for the year ended December 31, 1924, as $15,966. Bond interest absorbed $26,880, and other debits against the profit account brought the total to $32,897. As the balance brought forward was $6,514, the deficit carried into the current year was $25,392. The company's earnings in 1923, before interest and depreciation, were $95,104 and those for 1922 were $114,488. Net earnings for the first three months of 1925 showed improvement, totaling $12,956. After interest charges and reserve for bad debts, the net profit was $191. The company's net working capital as of March 31 was improved to the extent of $10,000, current assets being $724,606, as against current liabilities of $587,040 leaving the working capital at $137,566. The deficit stood at $24,992.

The Paramount International Rubber Company of Canada, Ltd., Farnham, Quebec, Canada, expects to commence the manufacture of molded hollow rubber goods about August 1. The company will have exclusive Canadian rights on all goods manufactured by the Paramount process, and in addition may export to any other country. They plan also to increase their revenue by licensing existing Canadian rubber companies to use the Paramount process. The officers of the company are: Fred T. Roberts, president, F. L. Dooley, secretary-treasurer. These officers with Donald Partridge of Williams, Partridge and Hodgson, Ltd., Montreal; A. Schwartz, industrial engineer, Southern Canada Power Co., Ltd., Lawson Williams of Williams, Partridge & Hodgson, Ltd. and Stuart H. Heist, constitute the directorate.

The Lee Puncture-Proof Tire Company of Canada, Ltd., Lachine, Quebec, Canada, is now producing both tires and tubes including balloons. About a year ago a group of Toronto and Montreal financiers, headed by J. J. Carrick, ex-M.P. for Port Arthur, Ontario, organized the Lee company. A former munitions plant at Lachine was purchased, remodeled and equipped with modern rubber machinery. Williams Seward is general manager, and Fraser Jamieson is general sales manager. Sales offices have been opened in Montreal, Ottawa, and Toronto, Canada.

W. B. Wiegand, has resigned as vice-president and general manager of the Canadian Goodrich Co., Ltd. He is succeeded by T. B. Tompkinson who is well qualified for the position.

The Columbus Rubber Co. of Montreal, Ltd., Montreal, Canada, had a "get together" conference recently. The manager and his staff from Ottawa, also the Toronto Branch manager and salesmen were present.

A. R. Kaufman, president of the Kaufman Rubber Co., Ltd., Kitchener, Ontario, Canada, has offered to donate four acres of land to the city of Kitchener for park and playground purposes, provided the corporation secures a small adjoining tract of land.

A. D. McLeod, View street, Victoria, B. C. has been appointed Vancouver Island distributer for Kelly-Springfield tires.

W. E. McCormish, formerly president of the Rubber Engineering Co., Akron, Ohio, is assistant manager of the Gregory Tire & Rubber Co., Ltd., Coquitlam, B. C.

The Canadian Lawn Tennis Association has notified both the Dunlop Tire & Rubber Goods Co., Ltd., Toronto, Canada, and George MacLellan & Co., Ltd., Glasgow, Scotland, that their respective tennis balls, the "Dunlop" and the "Compass" have been tested and found satisfactory by the association and that accordingly the balls of each firm are authorized for use by clubs for tournaments held in Canada.

The Montreal branch of the Dunlop Tire & Rubber Goods Co., Ltd., is advertising the Dunlop "Maxfli" Golf Balls in attractive illustrated newspaper copy. The Mechanics Supply Co., Ltd., is the distributer in Quebec City.

The Obituary Record

Director and Purchasing Agent of Thermoid Rubber Co.

THE many friends and business associates of Edmund Whetmore Craft, director and purchasing agent of the Thermoid Rubber Co., Trenton, New Jersey, were shocked to hear of his sudden death on July 19 while at the home of relatives in East Orange, New Jersey.

E. W. Craft

Born in Trenton June 26, 1881, Mr. Craft was educated in some of the schools of that city, these including the State Model School and the Rider Moore Business College. Beginning his business career in Trenton as a clerk in the employ of J. L. Mott, Mr. Craft later became employed by the Thermoid Rubber Co., where for about sixteen years he has been acting as purchasing agent, and for the last three years as one of the organization's directors. Thoroughly familiar with his particular industry, Mr. Craft had both lectured and written articles on the subject of crude rubber. Interested in the welfare of his city, he was a member of the Trenton Rotary Club, the Ashler Masonic Lodge, and the Crescent Temple Order of Mystic Shriners. He was a 32nd degree Mason. A kind, lovable man, Mr. Craft had a host of friends, while he gained the respect of all with whom he came in contact. His passing is a distinct loss to the Thermoid company, where he was held in great regard. He is survived by his widow and a young daughter.

Well-Known British Rubber Chemist

It is with sincere regret that we have need to record the death of Hubert Lauphier Terry, F. I. C., the well-known chemist, metallurgist, rubber expert and writer, of Manchester, England, who was formerly for nearly a quarter century British correspondent of THE INDIA RUBBER WORLD.

Hubert L. Terry

In the late nineties the Editor of THE INDIA RUBBER WORLD was attracted by the clear, concise and scholarly style and practical value of Mr. Terry's articles on rubber subjects, and reprinted several of them. Just prior to the beginning of 1900 Mr. Terry became our regular British correspondent and wrote a news letter which continued to be a monthly feature until about a year ago. His faculty of giving a chatty individuality to news items and discussions of prosaic technical facts gave this page more than ordinary readability. He acted as our special correspondent at the Paris Exposition of 1900, and has been an occasional contributor of signed articles on a great variety of rubber subjects, including reviews of rubber mills, manufacturing methods and conditions in various European countries. His most recent signed work has appeared in *The Rubber Age*, London.

Mr. Terry was primarily a chemist engaged mostly in consulting work for British rubber manufacturers, but later took up metallurgy to some extent. In 1901 he was elected a member of the committee of the Manchester section of the Society of Chemical Industry, and in 1905 was elected an associate of the Institution of Mining and Metallurgy in London. In recent years he has been prominent in the deliberations of the Manchester section of the Institution of Rubber Industry.

His intimate knowledge of British rubber manufacture placed him in an authoritative position to write an exceedingly good book entitled "India Rubber and Its Manufacture." It was intended for the general reader or technologist in other lines desiring a brief statement of the rubber business as a whole, but was welcomed by rubber manufacturers seeking to grasp the general procedure in lines other than their own.

Former Director of Goodyear Organization

James P. Loomis, a member of the board of directors of the Goodyear Tire & Rubber Co. up to that company's reorganization, and trustee of the University of Akron, died last month at his home in Akron at the age of fifty-nine. A popular man, and greatly interested in the development of his adopted city, Mr. Loomis had organized several of Akron's industries, or held important offices in connection with them. He was a Mason, and also a member of the Akron City Club, and the Portage Country Club. He is survived by his widow and two daughters.

AMERICAN RUBBER MANUFACTURERS APPEAL TO BRITISH GOVERNMENT

Secretary of State Kellogg received on July 17 a delegation of American rubber manufacturers, headed by Frederic C. Hood, president of the Hood Rubber Co., Watertown, Massachusetts. In the delegation were also A. L. Viles, general manager of the Rubber Association of America, Inc.; Edward B. Germain, president of the Dunlop Tire & Rubber Corporation; and several others.

The purpose of the committee was to discuss the present rubber situation, but chiefly to present a memorandum to the British Government through the British Embassy in Washington.

The memorandum is understood to request that the 10 per cent increase in rubber exports from British colonies authorized under the Stevenson restriction act shall be increased to at least 20 per cent.

The 10 per cent increase under ordinary circumstances will become effective on August 1, as 65 per cent of standard production is now authorized for export; it would mean that 75 per cent would be authorized if the request of the American consumers is granted.

British embassy officials are understood to have received the American delegation courteously and to have agreed readily to forward the memorandum to the British Government in London.

DURING APRIL, 1925, THE UNITED STATES EXPORTED 142,950 pneumatic casings for automobiles, value $1,676,092; 125,204 inner tubes, value $207,323; and 10,715 solid tires for automobiles and motor trucks, value $290,915. These compare favorably with the corresponding figures for April, 1924, of 113,135 pneumatic casings, value $1,402,594; 90,896 inner tubes, value $182,767; and 8,058 solid tires, value $209,520. For the ten months ended April, 1925, the totals were: 1,152,413 pneumatic casings, value $13,692,956; 1,015,677 inner tubes, value $1,800,900; 81,795 solid tires, value $2,117,325; as against the records for the ten months ended April, 1924, of 845,730 pneumatic casings, value $10,033,707; 749,081 inner tubes, value $1,347,989; and 86,385 solid tires, value $2,256,122.

The Rubber Trade in Europe

Great Britain

WITH rubber prices steadily rising, with speculators freely playing their parts, and with more or less confusion prevailing in the minds of even the best informed as to the future of the rubber industry, he would be rash indeed who attempted any predictions. Those, however, who are upholding the restriction measure call attention to its provisions for regulating the industry's present and future conditions, the government authorities themselves refusing to allow any changes in the carrying out of the scheme. William Ormsby-Gore, Under Secretary for the Colonies, has stated that he believes that prices were likely to decline considerably, while if a real scarcity of crude rubber was evident in the next few months it would be possible to abolish the restrictions.

Is a Rubber Shortage Imminent?

Those who are familiar with conditions in the Far East claim that the outcry regarding a possible shortage in the world's supply of rubber is not justified by the facts, and that notwithstanding the shrinkage of the London stocks, Malaya and Ceylon control reserves of output capacity which they are ready to release at short notice. According to the *Financial Times*:

There is a wide gulf between the present situation and a rubber famine. A negligible stock in London is no proof of an acute world shortage. We do not know how much rubber is held by the various estates, nor the quantity that has been accumulated by the large American consumers and others. All we are cognizant of is the quarterly increase that will be forthcoming under the terms of restriction. Consumption is increasing, and so is production. What will be the outcome in price no man can say. But it is probable we shall not see any reversion to the low levels touched during the last three years. The restriction scheme, if left alone, will duly provide such increase in the supply of the product as may be necessary.

James Fairbairn, presiding as chairman at the recent annual meeting of the Amalgamated Rubber Estates, Ltd., said in part:

I am an enthusiastic upholder of the Stevenson restriction scheme, and I see no need for considering the revision of its provisions. The scheme is sufficiently elastic to allow for any contingencies in the plantation industry, and the kind of clamor which has been going on in certain quarters for revision is, to say the least, ill-informed. I see that at a meeting of a rubber company recently held the chairman made a statement that "very soon the Stevenson scheme would 'automatically come to an end,' on the releases going to 100 per cent." That statement is entirely erroneous. The Stevenson scheme is so framed that it can go up to 100 and 110, and if necessary 120 per cent, but as to the advisability of keeping the machinery of the scheme in being and in good working order there can be no two opinions. The scheme as it stands to-day is primarily a scheme over which buyers hold the control. Demand will always ensure further releases, and this must always be in the hands of the buyer. It is a well-known economic maxim that the buyers always have the advantage, and this maxim applies today as firmly and truly as regards the rubber industry, governed as it is by the Stevenson scheme, as it does to the buying and selling of any other commodity.

Rubber To Pay British War Debts?

Certain British publications have construed the recent rubber report as published by the United States Department of Commerce to mean that England plans to pay off her war debts to the United States through profits resulting from the present high prices of rubber. However this may be, the *Financial Times* does not hesitate to make editorially the following bald statement:

While there is an actual pinch for supplies of rubber for prompt delivery, the speculator has also had a hand in running up the price, but only in so far as that influence has operated can the current level be regarded as artificial. But whether artificial or otherwise, the best market authorities of Mincing Lane see little hope of much easier price conditions for some time to come, so that the overburdened British taxpayer may reasonably hope that rubber will indirectly help to pay our heavy debt to America, while the investor in rubber shares may fairly expect to reap the additional advantages of a better yield on his investment, coupled with the peculiar satisfaction which capital appreciation—untaxed—alone can give. Incidentally, sympathy with our poor friends the Americans will be tinged with satisfaction that the rise in the price of the commodity lightens the burden of our debt payments.

British Rubber Manufacturers Ask Relief From Restriction

The India Rubber Manufacturers Association, representing 95 per cent of British manufacturers, looked at the Stevenson measure from another point of view in issuing, on July 17, a manifesto demanding repeal, or drastic modification, of the scheme for the restriction of crude rubber exports from Malaya and Ceylon. The manifesto argues that it was never intended to raise prices to their present level, but only to stabilize them at about 15*d* a pound. It is also stated that in October, 1922, a committee sent by the association conferred with Lord Stevenson as to the possibility of prices soaring in the event of short supplies. The reply was then emphatically made that in such a case steps would be taken to unload stocks to ease the situation and bring prices down. Lord Stevenson has further declared that the object of the schme was to bring a stable price, fair alike to manufacturer and producer.

A new manifesto was later issued on behalf of rubber consumers by the Society of Motor Manufacturers and Traders, the Royal Automobile Club, The Commercial Motor Users' Association, and the British Cycle and Motorcycle Manufacturers' and Traders' Union, declaring that the price of crude rubber had advanced 250 per cent in the past three months and that supplies in 1926 will be obtainable only at still greatly advanced prices. The manifesto also says that further substantial increases of prices by rubber manufacturers are inevitable unless the restriction on supplies is drastically modified.

British Company News

Sir Frank A. Swettenham is one of the directors of the recently established Layang Rubber Plantations Co., which, capitalized at £150,000, will acquire lands in Malaya and elsewhere in order to carry on the business of planting rubber. The registered office of the new organization is 262 Salisbury House, London, E.C.2.

It is understood that the Merlimau Rubber Estates and the Pegoh Co. have recently acquired a large and important group of rubber estates in Johore, the purchase price being £336,500. The property, known as the Rengam Estates, is said to comprise a total area of 6,460 acres, practically all of which is mature. During last April the Merlimau organization increased its capital to £500,000.

H. W. D. Ward, Ltd., manufacturer of colors and chemicals for the rubber industry, and specializing in the production of cadmium sulphide, arsenic, zinc, and antimony sulphides, etc., has secured a factory at Fenny Stratford, Bucks, England, which is being well equipped with modern facilities for supplying the trade. H. W. Dudley Ward, the governing director of the organization, a well-known chemist, has for the past fifteen years made the production of antimony sulphide a subject for special research.

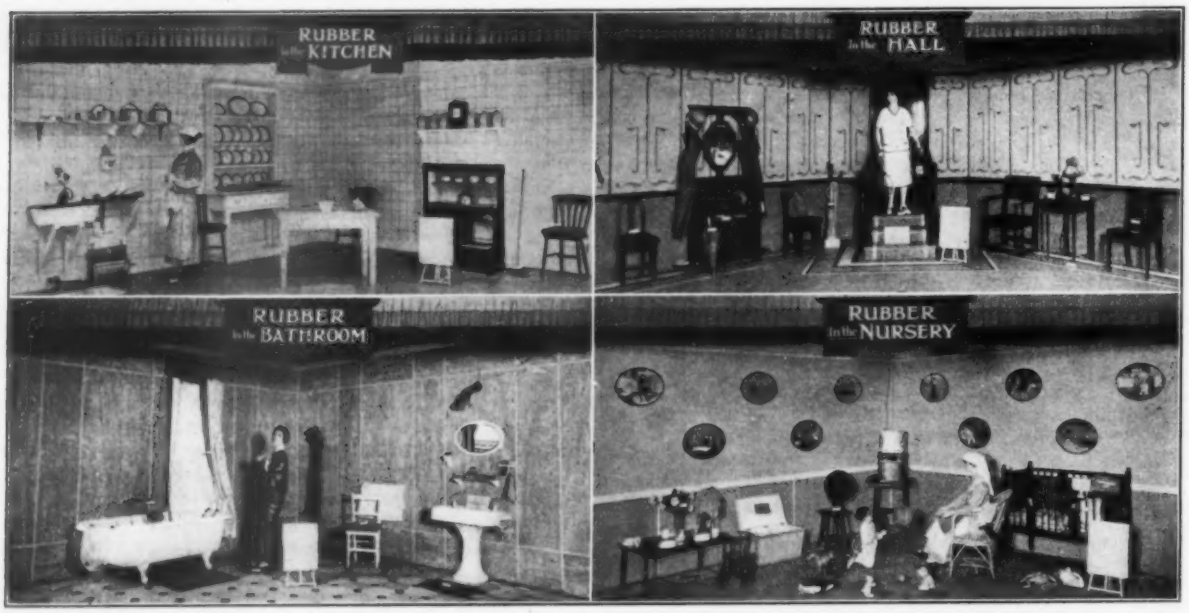
With improved conditions and steady growth of business, the Dunlop Rubber Co. has been able to offer to stockholders a scheme which, in its operation, will apparently be of benefit to

all concerned. The public generally will however have no opportunity of participating in the offer of 3,750,000 shares which is about to be made in connection with the refinancing plan.

In its annual report Callender's Cable Co. has been able to show a record business and a further substantial improvement in profits. All its factories were fully employed last year, and continue so at the present time. In view of the rapid extension of its operations both at home and abroad, the company is finding it necessary to formulate a plan for the issuing of new shares, in order to increase its available capital resources.

The "Rubber House" at Wembley

Displays of rubber products at this year's British Empire Exhibition at Wembley, London, are of especial interest and are attracting much attention. Particularly is this true of the exhibits in the Malaya Pavilion, and the now famous and cleverly-planned "Rubber House" arranged by the Rubber Growers' Association. The last mentioned little structure, where rubber goods suitable for use in the ordinary dwelling-house are shown arranged in their proper positions, occupies the best site in the Pavilion, being immediately to the right of the main entrance. The house covers an area of 25 by 25 feet, and is divided diagonally into four compartments, while in each of these sections is staged a home interior.



Courtesy Rubber Growers Bulletin

Exhibits of the Rubber Growers' Association at the British Empire Exhibition, Wembley, England

In the bathroom, just opposite the entrance, blue tones predominate, the floor being laid in large pale blue and white rubber tiles, inlaid at the corners with smaller black tiles. The entire walls are covered in rubber panels set apart by white wood beading. Other rubber products shown in this room include a rubber shower curtain and spray connection, non-slip interior bath mat, various kinds of brushes, sponges, sponge bag, etc. In one corner of the room stands a lay figure representing a young woman dressed in a gorgeous rubber kimono, and wearing crêpe-soled bathing shoes.

The rubber goods displayed in the kitchen are for strictly utilitarian purposes. The floor is covered with a serviceable rubber carpet, in tones of terra cotta. On the left wall is a rubber-lined sink and rubber-covered drying board: the dresser is rubber-covered, as is also a useful table. Sponge rubber mats are laid beside this table and before the sink. In addition to the usual kitchen equipment is a wringer (rubber rollers), squeegee, various brushes, etc. Here also is shown a wax figure representing a maid, her costume completed by rubber apron, rubber sleeves and gloves, while she wears crêpe-soled shoes.

The hall, which also presents excellent opportunities for displays, has a floor laid in light olive green rubber, the border being in black, white, and green. The walls have panels of olive green rubber. At the apex of the triangle formed by the two sides of the room is a door from which a few steps descend, the steps being covered by green marbled rubber. Another lay figure, showing a girl dressed for tennis, is posed on the top step. She is carrying a tennis racket with rubber grip and a net of tennis balls. In this hall an ebonite table and chair have been placed, the table affording a good opportunity of showing a telephone and some bowls of very realistic rubber flowers. On the chairs are "newmatik" cushions, while rubber has again been utilized in the manufacture of the hats and raincoats on the hall stand.

Completing this exhibit is an all-rubber golf bag furnished with clubs, golf balls and golf ball cleaner.

The rubber floor of the nursery, with its pictured panels, should have an especial appeal to children. Rubber lamp shades, rubber sheets, hot water bottles, etc., find a place in this room, as well as rubber toys. Lay figures of a nurse and a child are both utilized for the display of various rubber garments. The house as a whole has been cleverly planned.

Rubber Flooring and Paneling at Wembley

Much of the attractiveness of the rubber displays at Wembley is due to the various types of flooring and paneling which cover large spaces in the Malaya, British Government, and Ceylon Pavilions. The manufacturers responsible for this extensive and beautiful work are: the North British Rubber Co., Spencer Moulton Ltd., and the India Rubber Gūtta Percha and Telegraph Works Co., Ltd.

Some of the other organizations maintaining comprehensive exhibits of many rubber products are: The Reliance Rubber Co., James Lyne Hancock, Ltd., and Pure Plantation Rubber Products, Ltd.

Germany

The continued rise in crude rubber has increased prices of all rubber goods. This upward revision of quotations has to a certain extent taken the rubber goods dealers by surprise, for the policy of underselling and underbidding had, in the early months of the current year, rapidly spread and it was confidently expected that prices in general would be fixed on a lower scale soon, so that manufacturers have their hands full trying to explain that, with rubber costing over 100 per cent more than a few months ago, they must increase prices of finished goods.

Technical rubber goods had already been raised the previous month, but from June 7 new prices became effective which showed increases of from 30 to 60 per cent. Tires have been put 5 to 10 per cent higher, except bicycle tires, quotations for which remain unchanged—for the present at least.

Manufacturers of rubber sporting goods announce an increase of 10 per cent on all articles except tennis balls.

As rubber prices have continued their upward course since the date of these revisions, further increases, in at least some departments if not all, may be expected.

The firm of C. Müller, Gummiwarenfabrik A.-G., Berlin. Weissensee, has just celebrated the 50th year of its existence. It was established in 1875 by Carl Müller, who died in 1910. The object of the firm was the production of surgical goods of sheet rubber and hard rubber. The business, started in rented quarters, expanded satisfactorily so that after eleven years, the founder was able to move into his own premises. Since then the activities of the firm have been repeatedly extended. At present it employs 350 persons.

According to a government decree of May 20, the ruling of January 16, 1917, requiring import permits for the importation of footwear of rubber or of rubber and other materials, has been abolished and these goods may now enter freely. At the same time gramaphone plates of hard rubber have also been put on the list of goods of which import is unrestricted.

Hamburg Rubber Market

With the reopening of the rubber futures market at Hamburg a long-felt need has at last been filled. In 1912 this business was first started for rubber at Hamburg. The war put an end to it and the vagaries of the mark made it impossible to start again immediately after the war was ended. However, now that German currency has been stabilized, it was felt that there was no reason why there should not once more be contract selling and buying of rubber on the Hamburg exchange, in order to offer importers and dealers the opportunity to insure themselves against loss during periods of price fluctuation, and also to make possible the accumulation of large stocks of the raw material to help the industry over critical times. Standard crêpe and sheet besides thick or thin clean brown crêpes and brown blanket crêpes, stored in recognized warehouses in Hamburg, Amsterdam and England, will be traded.

The Liquidationskasse A.-G., Hamburg, will act as guarantor for the fulfillment of contracts by authorized firms. Quotations of the rubber futures market will take place only once a day until further notice.

Synthetic Rubber Revived

It is long since anything has been heard of attempts to produce synthetic rubber on a commercial scale. The defects in even the best types of synthetic rubber, together with the fact that it could not compete with the natural article as to price, effectively put a stop to such efforts.

It is reported that the Erste Deutsche Rohgummi Werke (Edrog), Wiebe & Cons, has been formed at Hannover to produce artificial rubber from a domestic raw product said to be obtainable in large quantities. The new synthetic rubber is made from the isoprene obtained from this raw material according to a process it has taken the founder of the company twelve years to perfect. It is claimed that tests show the article to equal a medium grade natural rubber; however, while its elasticity is greater, it is slightly weak as to nerve. This latter defect is said to disappear with prolonged storage. Furthermore, it is expected that proper working with suitable machinery will so improve this material that it will equal first class Pará.

The cost price is stated to be so small that the material would be able to compete with rubber even when prices for the latter were low.

New Rubber Goods

German rubber manufacturers have definitely turned their attention to the possibilities of thin sheet rubber. There was a time when this material was regarded a little skeptically particularly on account of its wearing qualities. However, the handsome colors in which it can be turned out and the variety of designs it lends itself to, have made it popular and now we have aprons for women and children, table-covers, panties, carriage covers, sleeve protectors and even lamp shades, besides bathing caps and suits.

Rubber novelties made abroad seem to appeal to local taste and German manufacturers take these up soon enough once their attention has been called to them so that a whole list of similar articles, including a number that have appeared at the fashionable bathing resorts of America, England and France, is now advertised in German papers.

The vogue of bobbed hair is held responsible for a new fad, namely, veils of rubber, or rubberized fabrics, to be attached at the back of the hat in order to protect the neck from the sun. Not only women are wearing these veils but at the summer resorts in the mountains and on the sea shore, the hats of many men were similarly embellished.

Switzerland

At the Second Swiss International Automobile Show held at Geneva, March 20 to 29, 1925, several American tire manufacturers and almost all the chief European tire companies were represented.

It was noted that while French and Italian cars of 10 h.p. (European rating) or under were generally equipped with balloon tires, hardly any of the larger and more powerful machines made in those countries were shown with them.

It seems to be the feeling in Europe that larger sizes of beaded edge balloons are dangerous and hard on the mechanism of medium and high-powered machines. Michelin showed a new size balloon 905x165 to take the place of 895x135. This tire is said to be still in an experimental stage. Michelin also had a strip attachment for use with the larger sizes of beaded edge tires.

American cars exhibited were for the most part equipped with straight side balloons of American make, showing an entirely different tendency than in the case of European cars of similar power.

Regarding the popularity of different makes of tires, Michelins predominate, the percentage in French Switzerland being 70 to 80 and in German Switzerland about 50. American tires are gaining in popularity chiefly due to the increased number of American cars used. The Zurich district at present is the most favorable for American tires.

RUSSIA HAS ACQUIRED ITS FIRST AIRSHIP WITH FUNDS SUPPLIED by the Russian Society of Chemists and the Russian rubber workers. The rubberized fabric used in making the airship is said to have been produced in Russia, although this seems doubtful. At any rate, the airship, which was built to honor Lenin, is a significant testimony of the harmony existing between chemists and rubber workers on the one hand, and of the developing spirit of industrial enterprise in Russia on the other.

The Rubber Trade in the Far East

Malaya

It may be an ill wind that does nobody good but it certainly would be an unnatural wind that brought no harm. So it is at the present time when one would have thought that the booming prices were filling the breasts of everyone in Malaya with joy. But the fact is that a number of big Asiatic dealers, chiefly Chinese, in Singapore and Penang, had sold rubber forward at about 1*s* 6*d* a pound, and are now caught short, with the consequence that several are facing ruin. This of course will not be without a certain effect on the business.

Then the prospect of the permission to tap 100 per cent brings with it the labor problem; it is figured that considerably more hands will be needed than at present, resulting in competition for labor, higher wages, bolting and other ills peculiar in such situations here.

But that is not the only cause for worry. It is known that many concerns, including some European, have been constantly urging the abolition of restriction. In certain quarters it is stated that once 100 per cent output has been permitted, restriction will automatically be discarded,—as the local government is tired of the business and also because it is said to have a demoralizing effect in the lower ranks of those employed in enforcing it.

However that may be, there seems to be nothing in the attitude of the Home Government that would indicate an intention to abolish restriction as soon as the 100 per cent mark has been reached, and after all that is what counts. So that those who view the rapid rise of rubber with suspicion, every day expecting it to tumble from its sudden height, scarcely need to fear that lack of the restriction screw will cause another slump.

Still another source of anxiey is found in the occasional reports of hoarding. It is claimed that both European and Asiatic estates are busy laying up large stocks of rubber which will be thrown on the market as soon as full production is permitted. That certain local firms are doing this sort of thing is quite possible, though it remains to be seen whether the extent of the evil is as great as some would have it appear to be.

Despite all these fears, however, great satisfaction over the working of restriction prevails, for the chief credit for the present upward swing is given restriction. No wonder then that the attitude of the *London Times*, which consistently refuses to believe that restriction saved the industry, hurts the *Malayan Tin & Rubber Journal*. The London paper ascribes the reduction in stocks chiefly to increased demand and not to restricted output. This, the Malayan journal considers illogical, because, if the Stevenson scheme had not wiped out the huge stocks which were in London at the end of 1922, these would have been used by buyers to keep rubber prices low, with the result that vast acreages in Malaya, Ceylon, Java and Sumatra would have gone out of tapping and eventually would have ceased to exist! In the same breath it characterizes the statement of the *Times*, that if Malaya and Ceylon had not restricted, Java and Sumatra would have produced less rubber, as utter nonsense and enlightens that paper by explaining that in a struggle for "survival of the fittest," every single soul possessing a rubber tree in the Middle East would have tapped "hell-for-leather!"

Rising prices seem to have made the otherwise level-headed Malayan paper a trifle incoherent.

The *Straits Times*, while exulting over the fact that restriction has benefited Malaya to the extent of over $200,000,000, sniffs the air suspiciously. The shortage (if it exists) and balloon tires do not offer a satisfactory explanation for the soaring of rubber prices. There is something behind this, manipulation by consumers who bought forward sometime ago and enjoy boosting a rising market in order to make those who did not similarly cover themselves quake and shiver. And it warns producers that these manipulators may decide to drop the market as quickly as they raised it.

This paper can see no signs of a real scarcity. The Dutch natives continue to tap as before, Malaya and Ceylon do not appear to have reached their full power and finally, it may later on be found that standards are fictitious and that the British have in reality never restricted by more than 25 per cent.

Rubber Plantation Reports

From the report of the Selangor Rubber Co., Ltd., we learn that its outputs were 680,150 pounds in 1922, 666,526 pounds in 1923 and 504,759 pounds in 1924. At the same time cost price rose from 6¾*d*. per pound in 1922, to 7¾*d*. per pound in 1923 and 9¼*d*. for last year. Owing to favorable forward contracts in 1922 the profits were £33,820, while restricted output and lower prices obtained caused a drop to £17,818 in 1923 and £15,-319 in 1924. A dividend of 12½ per cent is to be distributed. The estate, the oldest in Malaya, is reported to be in good condition. It is intended to plant up 113 acres which had been granted the government for experimental purposes but which have been returned.

The Straits Rubber Co., Ltd., will turn out a dividend of 6 per cent. During the past year 380 acres on Nova Scotia estate were cleared and this land is now being planted with rubber. The company will clear and plant up the remaining area on this estate, some 600 acres, as labor is available.

Since 1906, the year of its formation, Highlands and Lowlands Para Rubber Co., Ltd., has paid out in dividends about 20¾ per cent per annum. In the last ten years it has produced over 12,-000,000 pounds of rubber; to the Federated Malay States Government it paid £26,600 in export duty and to the British Government £226,545 in taxes. For the past year the company declared a dividend of 10 per cent. It has decided to clear and plant up a considerable area with African oil palms.

The Ayer Kuning Rubber Co., Ltd., in which the above company is interested, will join in the experiment with oil palms. This company reports that gutta percha trees of the best quality have been found over an area of 1,000 acres on one of its estates. It is intended to preserve and increase these trees, acting in concert with the Government Forest Department, as the culture and tapping of gutta percha has hitherto been a Government project.

Ceylon

According to figures supplied by the Controller of Rubber, Ceylon, exports of rubber during April, 1925, totaled 3,284 tons of which 3,052 tons were Ceylon-grown and the rest imported. In 1924, the total shipments were 2,234 tons, 1,984 tons being Ceylon-grown. There were no latex shipments during April, 1925.

Prevention of Mould on Smoked Sheet

During the past year experiments were carried out by the Ceylon Rubber Research Scheme to determine the effect of smoke on the growth of mould on sheet rubber, whether under proper conditions mould can be entirely prevented or the tendency to mould growth reduced to a minimum.

The tests were carried out with so-called "uncombusted smoke," that is, the fire is controlled so that the wood does not blaze and the smoke may be expected to be rich in phenolic and tarry constituents.

Sheets were smoked for 11, 14 and 18 days, and mould-growth tests were started in some cases one hour after removal from the smoke house and in others after hanging the sheet in a drying room for 8 days.

It did not appear that heavily smoked sheet is more resistant to mould as regards the number of days before mould develops, though the amount of mould formed is less. Thorough washing of sheet before smoking led to similar conclusions. Sheets thus treated show less tendency to sweat after removal from the smoke-house and the appearance is improved, so that even though the sheets take 1-2 days longer to dry, this treatment is recommended. It is also advised that the sheet be packed on the day of removal from the smoke-house as the tests showed that sheets being in the drying-room eight days after smoking had a greatly increased tendency to form mould. Finally, it is not now thought likely that smoking can entirely prevent mould.

Ceylon Sole Crêpe

Ceylon is rapidly losing ground as a producer of sole crêpe, states the *Times of Ceylon*. It seems that Harrisons and Crosfields dominate the field with their soft crêpe produced by their Sumatra estates. This crêpe is uniform as to pattern and quality and is, therefore, more in demand than the Ceylon article which may be of better quality than the softer Sumatra article, but it is of irregular quality and is offered in too small quantity.

Netherlands East Indies

The first report on native rubber in the Dutch East Indies has been published by the Department of Agriculture under co-operation of the Native Rubber Investigation Committee, Batavia. It is by Dr. N. R. Pekelharing who made two trips to Djambi, one with Mr. Cumming in July-September, 1924, and another, along in January, 1925. The chief facts in this report are, that it is impossible to estimate the number of trees planted and in bearing, though it has been found that a great deal of planting has taken place since 1922. However, planting takes place only certain distances from the rivers and centers as the road system is very primitive. New extensions, therefore, cannot go on without limit.

The production per bouw (about 1.75 acres) planted with 1,000 trees comes to 900-1,800 kilos dry rubber. These enormous yields are obtained by ruthless slashing of the trees. To insure against loss due to this treatment, the owner plants new trees every year.

The rubber exported contains as much as 52 per cent of dirt and impurities. The large numbers of tappers who formerly came from Korintje to Djambi no longer come as they are planting coffee in their own land, which will prevent extensive increases of exports from Djambi. To sum up, bad methods of production and preparation, inadequate transportation facilities, lack of sufficient labor, are the drawbacks to any considerable expansion of native rubber in Djambi.

Native Rubber in Borneo

The report of Dr. Loos who spent two months investigating native rubber in Western Borneo shows that most of this rubber is planted on the low coast land which extends inland about 100 to 150 kilometers. (1 kilometer = 3,280 feet). The plantings look fine and healthy although tapping is extremely heavy. However, bark removal is very good.

In 1924, this division shipped 15,000 tons of rubber of which 10,000 tons came from Pontianak. In 1922 only 2,500 tons were sent from this port and in 1923 about 5,000 tons. It seems that maximum output has been reached for the present and that no further sensational rises need be feared until 1930, providing the labor question does not form an obstacle. Wages are as high as 50 guilders a month in some places, although in others as little as 10 guilders is paid.

There too, the buying up of rubber is exclusively in the hands of Chinese. The business amounts in most cases to barter; the articles taken in exchange are fancy tinned foods, luxury goods, liquor, besides necessaries.

Most of the rubber goes to Singapore where it enjoys a good reputation owing to its purity and comparatively low water-content. After Bangkalis rubber, the Pontianak product is the best received at Singapore; then follow Banjermassin and Palembang; Djambi rubber is the worst.

Areas and Production of Rubber

Temporary figures of the outputs and acreages of rubber estates on the East Coast of Sumatra have been published by the Trade Association of Medan for 1924. The total area under rubber in this district, including the East Coast of Achin came to 169,315 hectares (hectare equals 2.5 acres) of which 129,728 hectares were in bearing. The output was 43,337,791 kilos.

Divided according to nationality we get the following:

	Area Hectares	Area in bearing Hectares	Output Kilos
British	48,494	37,462	11,375,951
Dutch	49,234	40,445	12,848,933
Dutch-Indian	9,308	6,923	2,411,797
Franco-Belgian	19,803	16,667	6,158,814
American	29,108	21,638	7,882,267
Japanese	4,769	1,588	559,869
Others	1,599	5,005	2,100,158
Total	169,315	129,728	43,337,791

Compared with data for 1923, areas have increased, particularly in the case of the acreage in bearing which was 116,000 against 129,000 hectares for 1924. The extent of immature land is therefore only 40,000 hectares and of this amount, a large part will soon be tappable, as about 24,000 hectares were planted in 1918-1919. It may consequently be taken for granted that production and shipments will show a considerable increase in 1925 so that the total exports for this year may run up to about 65,000 tons.

The Rubber Producers Association has issued the following figures, in bouws (bouw = 1.74 acres) of newly planted areas for large estates in the Netherlands East Indies:

		Java	Sumatra and Outer Possessions	Total
Planted at the end of	1920	221,657	275,373	497,030
Additions in	1921	10,193	12,647	22,840
	1922	3,456	9,308	12,764
	1923	2,672	3,350	6,022
	1924	3,379	13,089	16,468

The total additions for the four years, 1921 to 1924, are therefore: Java, 19,700 bouws; Sumatra and outer possessions, 38,394 bouws; altogether 58,094 bouws.

Tax on Native Rubber

A Government decree of May 13, 1925, imposes a tax of 5 per cent on native rubber and gutta percha exported from any part of the Netherlands East Indies except Java, Madura, Bali, Lombok, and certain free ports, after June 1, 1925.

The tax is calculated on the value which for the present is fixed at 100 guilders per picul (picul = about 133⅓ pounds) for dry rubber (crêpe, sheet and blanket); 75 guilders per picul for wet rubber (slabs), and 50 guilders per picul for the inferior grades as scraps, bark, etc. The value for Djambi wet rubber has been put at 60 guilders per picul instead of 75 guilders.

Plantation rubber is exempt from this duty and special certificates of exemption will be issued.

Government Gutta Percha Output

The output of gutta percha on the government estates in Java is estimated at 35,000 kilos for 1926. The production did not increase as rapidly as was expected, therefore the 1926 estimate has been placed lower than that for 1925. However, the price for this article has risen considerably and a price of 6.50 guilders per kilo is counted on for next year.

Rubber Patents, Trade Marks and Designs

The United States

June 16, 1925*

1,541,810 Bathing cap. Margaret Hamilton, Memphis, Tennessee.

1,541,839 Electric lamp device with rubber grip. Lawrence W. Metzler and Walter L. Metzler, both of Topeka, Kansas.

1,541,949 Demountable rim. Chester N. Hauffe, Columbus, Ohio.

1,542,003 Hollow play ball. Ralph E. Riley, assignor to The Miller Rubber Co., both of Akron, Ohio.

1,542,103 Skate wheel with rubber treads. Alvin H. Shoemaker, Seattle, Washington.

1,542,533 Necktie frame with elastic cord. Paul A. Slemp, New York, N. Y.

1,542,547 Kite balloon. Herbert Gray Gibbs, London, England.

1,542,561 Sanitary rubber cover for pillows. Benjamin Laskin and Herbert J. Biberman, both of Philadelphia, Pennsylvania.

June 23, 1925*

1,542,926 Tire pressure gage. Park E. Welton, Cuyahoga Falls, Ohio, assignor to Tiregage Valve Corporation, Charleston, West Virginia.

1,542,943 Shock insulated vehicle wheel. Walter S. Josephson, New York, N. Y., assignor to George Whitaker Morley and Robert Roy Armstrong, trustees, both of Toronto, Ontario, Canada.

1,543,003 Non-skid fabric shoe. Jules C. Gindraux, Spokane, Washington.

1,543,024 Heel plate for rubber heels. William Alexander Morris, El Reno, Oklahoma.

1,543,133 Billiard and pool table cushion with an elastic band. Frederick W. Tilley, Hamilton, Ontario, Canada.

1,543,151 Tire blow out shoe. Alva Heywood Cooper, Atlanta, Georgia.

1,543,558 Faucet connector with a sleeve including a cylindrical body of soft rubber. William Gustav Donald, Oakland, California, assignor to Sanitary Drain Flusher, Inc., a corporation of Delaware.

1,543,559 Filler with body member of vulcanized fabric for the clamped ends of belts. Walter W. Donnelly, Fort Worth, Texas.

1,543,573 Foot arch brace comprising an elastic band and a pad. George H. Jung, Jr., Cincinnati, Ohio.

1,543,653 Restraining body bed brace with elastic body band. Elizabeth Bagnor, Pittsfield, Massachusetts.

June 30, 1925*

1,543,724 Rubber football. Fred Thomas and William E. Roberts, of Yonkers, New York, assignors to Paramount Rubber Consolidated, Inc., Tuckahoe, New York.

1,543,878 Demountable rim. Elver E. Sawtelle, Des Moines, Iowa.

1,543,912 Rubberized fabric doorcheck strap. John R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

1,543,954 Toy balloon. John W. Shira, assignor to The Oak Rubber Co., both of Ravenna, Ohio.

1,544,032 India rubber washers provided with shock absorber for vehicles. Henry Charles Alexander Potez, Lavallois-Perret, France.

1,544,209 Ventilator. Paul A. Bernhardt, Milwaukee, Wisconsin, assignor to Loeffelholz Co., both of Milwaukee, Wisconsin.

1,544,372 Metal block for pneumatic tired wheels. Lester E. Campbell, Mobile, Alabama.

1,544,375 Expansible truck tire rim. William Henry Cook, Lee, Massachusetts.

Reissues

16,104 Horseshoe pad. Serial No. 704,564, filed April 7, 1924. George J. Heymoss, Jr., Detroit, Michigan.

July 7, 1925*

1,544,547 Pneumatic arch support. George S. Barker, Denver, Colorado.

1,544,587 Detachable rubber heel for shoes. Ladislav Misura, Newark, New Jersey.

1,544,597 Rim with removable ring. Frederick C. Peace, Atlanta, Georgia.

1,544,639 Cushion tire. Fred D. Fowler, assignor to The Hood Rubber Co., both of Watertown, Massachusetts.

1,544,641 Rubber stocking ankle reducer. Victor Guinzburg, assignor to I. B. Kleinert Rubber Co., both of New York, N. Y.

1,544,672 Tubular rubber swimming collar. Seth R. Milbury, Irvington, New Jersey.

1,544,706 Shower bath device with a flexible tube. Nannie L. Wallen, Chicago, Ill.

1,544,770 Scabbard with elastic strap for ice skates. Edwin B. Nathan, Yonkers, New York.

1,544,826 Cover for spare tires. Thomas D. Foley, Omaha, Nebraska.

1,544,835 Windshield cleaner. Arthur Samuel Greenberg, Baltimore, Maryland.

1,544,925 Goggles with elastic headband. Samuel Nelson, Waterloo, Iowa.

1,545,056 Rubber cushion connection for vehicle construction. Alfred F. Masury and August H. Leipert, assignors to International Motor Co., all of New York, N. Y.

1,545,057 Rubber cushion connection for vehicle construction. Alfred F. Masury, assignor to International Motor Co., both of New York, N. Y.

1,545,062 Rubber heel. Patrick F. O'Leary, Cleveland, Ohio.

1,545,093 Rubber shower bath curtain. George Gallob, Brooklyn, New York.

1,545,102 Atomizing stopper for bottles. Thomas J. Holmes, Boston, Massachusetts.

1,545,236 Rust resistant liner for automobile rims. George F. Couchey, assignor of one-half to A. G. Summerell, both of Vermillion, Ohio.

1,545,277 Fountain pen. Abraham Pollok, assignor to Samuel Kanner, both of New York, N. Y.

1,545,399 Attachment for fountain pens. Howard J. Clennan, Avant, Oklahoma.

1,545,436 Nursing bottle and nipple. Lacie A. McGeary, Parkersburg, West Virginia.

1,545,446 Folding bathtub support for infants. Edwin E. Paulet, St. Paul, Minnesota.

*Under Rule No. 167 of the United States Patent Office, the issue closes weekly on Thursday, and the patents of that issue bear date as of the fourth Tuesday thereafter.

The Dominion of Canada

June 9, 1925

250,436 Horseshoe pad with rubber filling. Frederick Conrad Robertson, Spokane, Washington, and Philip Patrick Rooney, New York, N. Y., both in the U. S. A.

250,454 Golosh formed from rubber in one piece. Morland Micholl Dessau, London, England.

250,455 Container for corrosive liquids, with connecting rubber bag. Kenneth Essex Edgeworth, London, S. E. 18, England.

June 16, 1925

250,639 Photographic process involving the use of gutta percha. Charles Beebe Murray and Alexander Murray, both of Cincinnati, Ohio, U. S. A.

250,699 Dust cap for tire valves. Charles Jasper McBurney, Winnipeg, Manitoba, Canada.

250,748 Rubber garment. The Dominion Corset Co., assignee of Louis, J. A. Amyot, both of Quebec, Canada.

250,783 Hollow rubber ball. A. G. Spalding & Bros. of Canada, Ltd., Brantford, Ontario, Canada, assignee of Addison T. Saunders, Akron, Ohio.

June 23, 1925

250,973 Rubber belting. The Security Rubber & Belting Co., assignee of James W. Mowrey, both of Chicago, Illinois, U. S. A.

251,004 Automobile rim. James G. Tait, Howard B. Wallace and Edward J. Jonssens, as trustees of The Simply Quick Rim Co., all of Hollywood, California, U. S. A.

June 30, 1925

251,092 Device for securing fractured casings to rims. John Andrew Graham, Woodville, Ontario, Canada.

251,094 Jointed toy figure fastened together by an elastic member. Rene D. Grove, Middleton, Pennsylvania, U. S. A.

251,133 Fountain brush with an elastic band. James Bidwell Mills, Toronto, Ontario, Canada.

251,173 Surgical truss. Frederick Schutze, London, N. 7, England.

251,279 Tire rim. The McNamara Motor Wheels, Ltd., assignee of Russell E. McNamara, both of St. Mary's, Ontario, Canada.

251,288 Endless inner tube. The Quebec Rubber Co., Ltd., Quebec, assignee of The Quebec Sales Co., Ltd., assignee of Harry M. Richardson, assignee Horace Hillyard Hastings, last three of Toronto, Ontario, all of Canada.

July 7, 1925

251,329 Infants' feeding bottle. Richard Stanley and Albert Walton Dowell, both of London, E. 5, England.

251,331 Anti-slip shoe sole. Harry Alfred McKnight and Frank Ellis Burns, co-inventors, both of San Francisco, California, U. S. A.

251,371 Paving block partly made of a rubber slab. Lucien Gaisman, Manchester, County of Lancaster, England.

251,510 Rim for pneumatic tires. The Dunlop Tire & Rubber Goods Co., Ltd., Toronto, Ontario, Canada, assignee of Colin Macbeth and John Thomas Turney Randles, both of Birmingham, County of Warwick, England.

251,523 Belt of fabric united by a vulcanized material. The Goodyear Tire & Rubber Co., assignee of Elinor Gairing Kimmich, both of Akron, Ohio, U. S. A.

251,561 Paving block with facing pad of rubber. Louis Cox, Birmingham, Warwick, and Edwin John Burt, assignee of one-half of the interest, both in England.

The United Kingdom

June 4, 1925

231,857 Glass or quartz vessel with a coating of vulcanized caoutchouc. Jenaer Glaswerk Schott & Gen., Otto-Schott-Strasse, assignees of C. Zeiss (firm of), Carl-Zeiss-Strasse, both in Jena, Germany.

231,893 Airplane radiators with rubber shock absorbers. Soc. Anon. des Ateliers d'Aviation, L. Breguet, 115 Rue de la Pompe, Paris, France.

Chemical patents will be found on page 659. Machinery and Process Patents on Pages 662-663

231,916 Brick machines using rubber covered rollers. E. G. & M. Normand, 36 Rue de L'Egalite, Caudry, Nord, France.

231,923 Thermionic valve holders consisting of a block of insulating material such as vulcanite. R. Woods, 95 Great Portland street, London.

231,927 Pneumatic suspension for vehicles. C. E. Holden, 28 Wood street, Deansgate, Manchester.

231,942 Pneumatic cushions on coal cutting machines. A. W. Reichwald, Exchange Buildings, Newcastle-on-Tyne (E. Schweitzer, Neukirchen, Moers, Germany).

231,943 Clock work electric valves with rubber disks. W. E. King and Gas Meter Co., Ltd., 238 Kingsland Road, London.

231,957 Gramophone having a tubular rubber connector, C. M. DeC. De La Bourdonnais (Prince De Mahe), Loventor Manor near Totnes, Devon.

231,960 Rubber spring suspensions for vehicles. J. I. Thornycroft & Co., Ltd., Thornycroft House, South Square, Westminster, London, and V. G. Barford, Motor Vehicle & Engine Works, Basingstoke, Hampshire.

231,964 Printers' blankets comprised of a layer of rubber, etc., composition. A. F. Decker, 142 Monterey avenue, Pelham, New York, U. S. A.

231,966 Rubber lining of bands to secure artificial teeth. H. Capleton, 114 South Road, Waterloo, Liverpool.

231,970 Wind screen cleaner, E. Aufiero, 696 Myrtle avenue, Brooklyn, New York, U. S. A.

231,981 Pad or squeegee containing a rubber disk for cleaning wireless receiving sets. A. F. Portway, 24 Palace Grove, Bromley, Kent.

231,992 Attachments for tire valves. Dunlop Rubber Co., Ltd., 1 Albany street, Regent's Park, London, and C. Macbeth and A. Kay, Fort Dunlop, Erdington, Birmingham.

232,006 Electric switches with rubber packings. J. H. Gath, 12 Horton street, Halifax, Yorkshire.

232,051 Golf scoring apparatus with rubber stem. T. H. Hart, Handsworth, Birmingham.

232,066 Ventilating hat bands with elastic cords. J. N. Dean, Cheadle Heath Works, Stockport, Cheshire.

232,082 Vehicle bodies with rubber weather strips. F. B. Dehn, 53 Doughty street, London (E. G. Budd Manufacturing Co., 25th street, Philadelphia, Pennsylvania, U. S. A.).

232,093 Non-slipping pad with rubber covering for ladders. S. Percival, 40 Chancery Lane, London (S. Poeymirou, 13 Rue Beaucourt, Lille, France).

232,095 Foot arch support of rubber, etc. L. E. Scrannage, 1020 Lincoln Building, Penn Square, Philadelphia, Pennsylvania, U. S. A.

232,100 Press button electric switches with rubber insulation. E. C. R. Marks, 57 Lincoln Fields Inn, London (National Carbon Co., 30 East 42nd street, New York, N. Y.).

232,106 Locking nuts containing rubber filling. R. M. G. Sobey, 127 Wellington street, Windsor, Victoria, Australia.

232,116 Hand stamps employing a series of strip rubber stamps. F. R. Talmer, 23 Ivy Lane, London.

232,123 Elastic abdominal belts. M. S. Israels, 2 Prinz Mauritzlaan, Bussum, Holland.

232,126 Bath with rubber lining for use in electrical therapeutics. E. R. G. Greville and F. W. Read, 167 Gray's Inn Road, London.

232,128 Brackets with rubber sheaths for lamp or candle, etc., holders. R. J. Ross, 7 Queen's Road, Crosby, near Liverpool.

232,138 Coal bags made from discarded tire covers. J. Hawley & Co., Ltd., and J. W. Hawley, both of Goodall street, Walsall, Staffordshire.

232,143 Windshield cleaner with squeegee. J. F. Monnot, Highwood House, Mill Hill, London.

232,148 Pneumatic cushions. C. E. Heinke & Co., Ltd., and E. C. Lacey, both of 87 Grange Road, Bermondsey, London.

232,171 Detachable rims for wheels. W. Zipper, 120A Haupstrasse, Vienna, Austria.

232,187 Flexible floats of rubber for raising sunken vessels. H. Faure, 4 Avenue Dussap, Toulon, Var, France.

232,218 Wireless receiving system including a rubber cap. E. G. Gage, 41 Garden Place, Brooklyn, New York, U. S. A.

232,247 Tire casings. The B. F. Goodrich Co., 1780 Broadway, New York, N. Y., assignees of I. R. Renner, Medina Road, Fairlawn, Ohio, both in the U. S. A.

232,248 Gear wheel blanks manufactured from tire cord. Thomson-Houston Co., Ltd., Brown House, Aldwych, London, assignees of A. C. Hoof, 255 Park avenue, Hinsdale, Illinois, U. S. A.

232,252 Drop delivery apparatus with rubber stopper and ball. I. Arbatsky, 17 Motzstrasse, Berlin, Germany.

June 10, 1925

232,295 Electrical instrument knobs partly composed of rubber. R. E. Beswick and P. N. Glendinning, both of Cozwhy Works, Connaught Road, Ilford, Essex.

232,297 Apparatus for making book signatures; involving the use of rubber or other adhesive applying strips. J. Murray, 33 Hatton Garden, London.

232,329 Siphon with rubber bulb. J. E. Meir, 243 Swanston street, Melbourne, Australia.

232,376 Machine for testing, packing, etc., eggs, having a rubber inking arrangement. S. Loughran, 66 Clonard Gardens, Falls Road, Belfast, Ireland.

232,382 Splints; artificial limbs with sponge rubber pads. R. Londen, Clerwood, Costorphine, Edinburgh, Scotland.

232,386 Brush with rubber bonnet, for cleaning motor cars. S. W. J. Cook, 7 Davey Place, Norwich.

232,429 Inflating valve plunger with a rubber cap. H. Lewis, 5 Arnside Road, Southport, Lancashire, and Liverpool Rubber Co., Ltd., Vauxhall Road, Liverpool.

232,434 Rubber syringe for applying ointment. G. R. Baxter, 7 Brixton Hill, London.

232,460 Rubber door stop. F. B. Dehn, 53 Doughty street, London. E. G. Budd Manufacturing Co., 25th street, Philadelphia, Pennsylvania, U. S. A.

232,473 Lamp failure alarm with vulcanite plunger. A. Shaw, 6 Brown street, West, and F. Fairer, 13 Reginald street, both in Colne, Lancashire.

232,482 Air vessel, partly made of rubber, for use with artificial silk pumps. C. Sandoz, 11 Rue Monte Rosa, Milan, Italy.

232,493 Ampoule with thin coating of caoutchone. M. Woelm Aktges, Spangenberg, Hessen, Germany, assignees of M. Hahn, 28A Dorotheenstrasse, Berlin, Germany.

232,498 Tobacco pipe, partly composed of white vulcanite. E. J. Mortimer, 78 Bromham Road, Bedford.

232,501 Mouldings with a trough section of vulcanized rubber for vehicle bodies. H. G. C. Fairweather, 65 Chancery Lane, London. (Dryden Rubber Co., 1014 South Kildare avenue, Chicago, Illinois, U. S. A.).

232,519 Reservoir pens. W. Livsey, 13 Groveland Road, Wallasey, Cheshire.

232,520 Spring suspensions for vehicles. G. Fornaca, 7 Via Giannone, Turin, Italy.

June 17, 1925

232,561 Blow pipe burner with rubber washer. A. B. Drager, Finkenberg, Lubeck, Germany.

232,576 Vehicle wheels with rubber ring cushions, etc. A. F. Fabre, 29 Rue Henri IV., Castres, Tarn, France.

232,597 Inking rollers with rubber bodies. V. M. Dulphy, 9 Rue du Potager, Bourg la Reine, Seine, France.

232,648 Pneumatic springs for vehicles. T. R. S. Kynnersley, Sion, Bombay, India.

232,668 Valves, partly made of rubber, for vent pegs, etc. T. Dudson, 42 High street, Abertridwr, Cardiff, Wales.

232,671 Windshield cleaner and anti-dazzle screen, Bristol Pneumatic Tools, Ltd., The Causeway, Fishponds; L. W. Slade, Sheffield Lodge, Westbury-on-Trym, and J. Roy, 64 Thingwall Park, Fishponds, all in Bristol.

232,755 Powder puff case with rubber lip. H. B. Rogers, 6 Fox Court, Holborn, London.

232,764 Electric conductor with rubber core. Fuller's United Electric Works, Ltd., Woodland Works, Grove Road, Chadwell Heath, and A. F. Welch, Goodmayes, both in Essex.

232,768 Electric resistances composed of an insulating tubular body of vulcanite, etc. T. R. Armstrong, Coventry Road, South Yardley, Birmingham.

232,779 Gaiters composed of a rubber, etc., sleeve for suspension springs. C. R. Little, 5 Primrose Hill street, Coventry.

232,822 Golf tee with molded rubber head and shank. C. F. Bennion, Elmhurst, Budleigh Salterton, Devon.

232,835 Appliance with elastic bands for treating bunions. A. F. Rash, Tower Chambers, Tower street, Ipswich.

232,836 Tubular ring for use in ring tennis. F. L. Sawyer, 12 West 44th street, New York, N. Y., U. S. A.

232,845 Heel pad. A. M. Eichorn, 2815 Grand Concourse, New York, N. Y., U. S. A.

232,882 File with elastic thongs for filing papers, etc. Reed, Graveley & Turner, Ltd., and H. V. N. Graveley, both of Sun street, Finsbury Square, London, and C. T. Brading, 9 Park Lane Mansions, Croydon, Surrey.

232,907 Spongy rubber sound deadening support for typewriter feet. E. Kenngott, 11 Simrockstrasse, Ehrenfeld, Cologne, Germany.

232,957 Tire inflating valves. R. H. Smith and L. H. Keogh, 100 Marine Parade, Napier, New Zealand.

June 24, 1925

233,052 Foot scrapers with rubber straps for running boards of vehicles. W. J. Davy, 28 Stanhope Gardens, Highgate, London.

233,066 Sprocket wheel ring connected to hub by rubber ring. Sir E. Jardine, Deering street, Nottingham, and I. Cohen, 41 Gertrude Road, West Bridgford, Nottinghamshire.

233,075 Flower holders, partly composed of rubber. A. A. D. Lang, 42 Berners street, London.

233,113 Brush handles. L. Lockwood, 33 Wards Road, Seven Kings, Essex. (Brosserie Bruxelloise, Vilvorde, Belgium).

233,125 Fabric for brake, clutch, etc., linings. E. J. Trainor, 111 Bedford avenue, Brooklyn, New York, U. S. A.

233,130 Fittings for braces, belts, etc., for personal wear, from vulcanite molded into an endless channel form. T. Walker, Ltd., Brook Street Works, St. Pauls Square, Birmingham; H. Margetson, 16 Moor Lane, Fore street, London, and T. Walker, of the Birmingham address given above.

233,135 Milk churn with rubber rings and a rubber sleeve. A. S. F. Robinson, White House, Borsham, Beccles, Suffolk.

233,193 Inflatable toy. P. Biaz, Ebner Buildings, Harrisburg, Pennsylvania, U. S. A

233,224 Elastic fabrics. W. Kops, 525 West End avenue, New York, N. Y., U. S. A.

233,225 Fire extinguishing apparatus with flexible pipes. W. O. Kelley, 476 Austin street, and G. T. Simon, 733 Saline Pass avenue, both in Beaumont, Texas, U. S. A.

233,241 Paper machines partly composed of hard and of soft rubber. C. R. Seaborne, 683 North street, Appleton, Wisconsin, U. S. A.

Germany

The continued rise in crude rubber has increased prices of all rubber goods. This upward revision of quotations has to a certain extent taken the rubber goods dealers by surprise, for the policy of underselling and underbidding had, in the early months of the current year, rapidly spread and it was confidently expected that prices in general would be fixed on a lower scale soon, so that manufacturers have their hands full trying to explain that, with rubber costing over 100 per cent more than a few months ago, they must increase prices of finished goods.

Technical rubber goods had already been raised the previous month, but from June 7 new prices became effective which showed increases of from 30 to 60 per cent. Tires have been put 5 to 10 per cent higher, except bicycle tires, quotations for which remain unchanged—for the present at least.

Manufacturers of rubber sporting goods announce an increase of 10 per cent on all articles except tennis balls.

As rubber prices have continued their upward course since the date of these revisions, further increases, in at least some departments if not all, may be expected.

The firm of C. Müller, Gummiwarenfabrik A.-G., Berlin. Weissensee, has just celebrated the 50th year of its existence. It was established in 1875 by Carl Müller, who died in 1910. The object of the firm was the production of surgical goods of sheet rubber and hard rubber. The business, started in rented quarters, expanded satisfactorily so that after eleven years, the founder was able to move into his own premises. Since then the activities of the firm have been repeatedly extended. At present it employs 350 persons.

According to a government decree of May 20, the ruling of January 16, 1917, requiring import permits for the importation of footwear of rubber or of rubber and other materials, has been abolished and these goods may now enter freely. At the same time gramaphone plates of hard rubber have also been put on the list of goods of which import is unrestricted.

Hamburg Rubber Market

With the reopening of the rubber futures market at Hamburg a long-felt need has at last been filled. In 1912 this business was first started for rubber at Hamburg. The war put an end to it and the vagaries of the mark made it impossible to start again immediately after the war was ended. However, now that German currency has been stabilized, it was felt that there was no reason why there should not once more be contract selling and buying of rubber on the Hamburg exchange, in order to offer importers and dealers the opportunity to insure themselves against loss during periods of price fluctuation, and also to make possible the accumulation of large stocks of the raw material to help the industry over critical times. Standard crêpe and sheet besides thick or thin clean brown crêpes and brown blanket crêpes, stored in recognized warehouses in Hamburg, Amsterdam and England, will be traded.

The Liquidationskasse A.-G., Hamburg, will act as guarantor for the fulfillment of contracts by authorized firms. Quotations of the rubber futures market will take place only once a day until further notice.

Synthetic Rubber Revived

It is long since anything has been heard of attempts to produce synthetic rubber on a commercial scale. The defects in even the best types of synthetic rubber, together with the fact that it could not compete with the natural article as to price, effectively put a stop to such efforts.

It is reported that the Erste Deutsche Rohgummi Werke (Edrog), Wiebe & Cons, has been formed at Hannover to produce artificial rubber from a domestic raw product said to be obtainable in large quantities. The new synthetic rubber is made from the isoprene obtained from this raw material according to a process it has taken the founder of the company twelve years to perfect. It is claimed that tests show the article to equal a medium grade natural rubber; however, while its elasticity is greater, it is slightly weak as to nerve. This latter defect is said to disappear with prolonged storage. Furthermore, it is expected that proper working with suitable machinery will so improve this material that it will equal first class Pará.

The cost price is stated to be so small that the material would be able to compete with rubber even when prices for the latter were low.

New Rubber Goods

German rubber manufacturers have definitely turned their attention to the possibilities of thin sheet rubber. There was a time when this material was regarded a little skeptically particularly on account of its wearing qualities. However, the handsome colors in which it can be turned out and the variety of designs it lends itself to, have made it popular and now we have aprons for women and children, table-covers, panties, carriage covers, sleeve protectors and even lamp shades, besides bathing caps and suits.

Rubber novelties made abroad seem to appeal to local taste and German manufacturers take these up soon enough once their attention has been called to them so that a whole list of similar articles, including a number that have appeared at the fashionable bathing resorts of America, England and France, is now advertised in German papers.

The vogue of bobbed hair is held responsible for a new fad, namely, veils of rubber, or rubberized fabrics, to be attached at the back of the hat in order to protect the neck from the sun. Not only women are wearing these veils but at the summer resorts in the mountains and on the sea shore, the hats of many men were similarly embellished.

Switzerland

At the Second Swiss International Automobile Show held at Geneva, March 20 to 29, 1925, several American tire manufacturers and almost all the chief European tire companies were represented.

It was noted that while French and Italian cars of 10 h.p. (European rating) or under were generally equipped with balloon tires, hardly any of the larger and more powerful machines made in those countries were shown with them.

It seems to be the feeling in Europe that larger sizes of beaded edge balloons are dangerous and hard on the mechanism of medium and high-powered machines. Michelin showed a new size balloon 905x165 to take the place of 895x135. This tire is said to be still in an experimental stage. Michelin also had a strip attachment for use with the larger sizes of beaded edge tires.

American cars exhibited were for the most part equipped with straight side balloons of American make, showing an entirely different tendency than in the case of European cars of similar power.

Regarding the popularity of different makes of tires, Michelins predominate, the percentage in French Switzerland being 70 to 80 and in German Switzerland about 50. American tires are gaining in popularity chiefly due to the increased number of American cars used. The Zurich district at present is the most favorable for American tires.

RUSSIA HAS ACQUIRED ITS FIRST AIRSHIP WITH FUNDS SUPPLIED by the Russian Society of Chemists and the Russian rubber workers. The rubberized fabric used in making the airship is said to have been produced in Russia, although this seems doubtful. At any rate, the airship, which was built to honor Lenin, is a significant testimony of the harmony existing between chemists and rubber workers on the one hand, and of the developing spirit of industrial enterprise in Russia on the other.

The Rubber Trade in the Far East

Malaya

IT may be an ill wind that does nobody good but it certainly would be an unnatural wind that brought no harm. So it is at the present time when one would have thought that the booming prices were filling the breasts of everyone in Malaya with joy. But the fact is that a number of big Asiatic dealers, chiefly Chinese, in Singapore and Penang, had sold rubber forward at about 1*s* 6*d* a pound, and are now caught short, with the consequence that several are facing ruin. This of course will not be without a certain effect on the business.

Then the prospect of the permission to tap 100 per cent brings with it the labor problem; it is figured that considerably more hands will be needed than at present, resulting in competition for labor, higher wages, bolting and other ills peculiar in such situations here.

But that is not the only cause for worry. It is known that many concerns, including some European, have been constantly urging the abolition of restriction. In certain quarters it is stated that once 100 per cent output has been permitted, restriction will automatically be discarded,—as the local government is tired of the business and also because it is said to have a demoralizing effect in the lower ranks of those employed in enforcing it.

However that may be, there seems to be nothing in the attitude of the Home Government that would indicate an intention to abolish restriction as soon as the 100 per cent mark has been reached, and after all that is what counts. So that those who view the rapid rise of rubber with suspicion, every day expecting it to tumble from its sudden height, scarcely need to fear that lack of the restriction screw will cause another slump.

Still another source of anxiey is found in the occasional reports of hoarding. It is claimed that both European and Asiatic estates are busy laying up large stocks of rubber which will be thrown on the market as soon as full production is permitted. That certain local firms are doing this sort of thing is quite possible, though it remains to be seen whether the extent of the evil is as great as some would have it appear to be.

Despite all these fears, however, great satisfaction over the working of restriction prevails, for the chief credit for the present upward swing is given restriction. No wonder then that the attitude of the *London Times*, which consistently refuses to believe that restriction saved the industry, hurts the *Malayan Tin & Rubber Journal*. The London paper ascribes the reduction in stocks chiefly to increased demand and not to restricted output. This, the Malayan journal considers illogical, because, if the Stevenson scheme had not wiped out the huge stocks which were in London at the end of 1922, these would have been used by buyers to keep rubber prices low, with the result that vast acreages in Malaya, Ceylon, Java and Sumatra would have gone out of tapping and eventually would have ceased to exist! In the same breath it characterizes the statement of the *Times*, that if Malaya and Ceylon had not restricted, Java and Sumatra would have produced less rubber, as utter nonsense and enlightens that paper by explaining that in a struggle for "survival of the fittest," every single soul possessing a rubber tree in the Middle East would have tapped "hell-for-leather!"

Rising prices seem to have made the otherwise level-headed Malayan paper a trifle incoherent.

The *Straits Times*, while exulting over the fact that restriction has benefited Malaya to the extent of over $200,000,000, sniffs the air suspiciously. The shortage (if it exists) and balloon tires do not offer a satisfactory explanation for the soaring of rubber prices. There is something behind this, manipulation by consumers who bought forward sometime ago and enjoy boosting a rising market in order to make those who did not similarly cover themselves quake and shiver. And it warns producers that these manipulators may decide to drop the market as quickly as they raised it.

This paper can see no signs of a real scarcity. The Dutch natives continue to tap as before, Malaya and Ceylon do not appear to have reached their full power and finally, it may later on be found that standards are fictitious and that the British have in reality never restricted by more than 25 per cent.

Rubber Plantation Reports

From the report of the Selangor Rubber Co., Ltd., we learn that its outputs were 680,150 pounds in 1922, 666,526 pounds in 1923 and 504,759 pounds in 1924. At the same time cost price rose from 6¼*d*. per pound in 1922, to 7¾*d*. per pound in 1923 and 9¼*d*. for last year. Owing to favorable forward contracts in 1922 the profits were £33,820, while restricted output and lower prices obtained caused a drop to £17,818 in 1923 and £15,-319 in 1924. A dividend of 12½ per cent is to be distributed. The estate, the oldest in Malaya, is reported to be in good condition. It is intended to plant up 113 acres which had been granted the government for experimental purposes but which have been returned.

The Straits Rubber Co., Ltd., will turn out a dividend of 6 per cent. During the past year 380 acres on Nova Scotia estate were cleared and this land is now being planted with rubber. The company will clear and plant up the remaining area on this estate, some 600 acres, as labor is available.

Since 1906, the year of its formation, Highlands and Lowlands Para Rubber Co., Ltd., has paid out in dividends about 20¾ per cent per annum. In the last ten years it has produced over 12,-000,000 pounds of rubber; to the Federated Malay States Government it paid £26,600 in export duty and to the British Government £226,545 in taxes. For the past year the company declared a dividend of 10 per cent. It has decided to clear and plant up a considerable area with African oil palms.

The Ayer Kuning Rubber Co., Ltd., in which the above company is interested, will join in the experiment with oil palms. This company reports that gutta percha trees of the best quality have been found over an area of 1,000 acres on one of its estates. It is intended to preserve and increase these trees, acting in concert with the Government Forest Department, as the culture and tapping of gutta percha has hitherto been a Government project.

Ceylon

According to figures supplied by the Controller of Rubber, Ceylon, exports of rubber during April, 1925, totaled 3,284 tons of which 3,052 tons were Ceylon-grown and the rest imported. In 1924, the total shipments were 2,234 tons, 1,984 tons being Ceylon-grown. There were no latex shipments during April, 1925.

Prevention of Mould on Smoked Sheet

During the past year experiments were carried out by the Ceylon Rubber Research Scheme to determine the effect of smoke on the growth of mould on sheet rubber, whether under proper conditions mould can be entirely prevented or the tendency to mould growth reduced to a minimum.

The tests were carried out with so-called "uncombusted smoke," that is, the fire is controlled so that the wood does not blaze and the smoke may be expected to be rich in phenolic and tarry constituents.

Sheets were smoked for 11, 14 and 18 days, and mould-growth tests were started in some cases one hour after removal from the smoke house and in others after hanging the sheet in a drying room for 8 days.

It did not appear that heavily smoked sheet is more resistant to mould as regards the number of days before mould develops, though the amount of mould formed is less. Thorough washing of sheet before smoking led to similar conclusions. Sheets thus treated show less tendency to sweat after removal from the smoke-house and the appearance is improved, so that even though the sheets take 1-2 days longer to dry, this treatment is recommended. It is also advised that the sheet be packed on the day of removal from the smoke-house as the tests showed that sheets being in the drying-room eight days after smoking had a greatly increased tendency to form mould. Finally, it is not now thought likely that smoking can entirely prevent mould.

Ceylon Sole Crêpe

Ceylon is rapidly losing ground as a producer of sole crêpe, states the *Times of Ceylon*. It seems that Harrisons and Crosfields dominate the field with their soft crêpe produced by their Sumatra estates. This crêpe is uniform as to pattern and quality and is, therefore, more in demand than the Ceylon article which may be of better quality than the softer Sumatra article, but it is of irregular quality and is offered in too small quantity.

Netherlands East Indies

The first report on native rubber in the Dutch East Indies has been published by the Department of Agriculture under co-operation of the Native Rubber Investigation Committee, Batavia. It is by Dr. N. R. Pekelharing who made two trips to Djambi, one with Mr. Cumming in July-September, 1924, and another, along in January, 1925. The chief facts in this report are, that it is impossible to estimate the number of trees planted and in bearing, though it has been found that a great deal of planting has taken place since 1922. However, planting takes place only certain distances from the rivers and centers as the road system is very primitive. New extensions, therefore, cannot go on without limit.

The production per bouw (about 1.75 acres) planted with 1,000 trees comes to 900-1,800 kilos dry rubber. These enormous yields are obtained by ruthless slashing of the trees. To insure against loss due to this treatment, the owner plants new trees every year.

The rubber exported contains as much as 52 per cent of dirt and impurities. The large numbers of tappers who formerly came from Korintje to Djambi no longer come as they are planting coffee in their own land, which will prevent extensive increases of exports from Djambi. To sum up, bad methods of production and preparation, inadequate transportation facilities, lack of sufficient labor, are the drawbacks to any considerable expansion of native rubber in Djambi.

Native Rubber in Borneo

The report of Dr. Loos who spent two months investigating native rubber in Western Borneo shows that most of this rubber is planted on the low coast land which extends inland about 100 to 150 kilometers. (1 kilometer = 3,280 feet). The plantings look fine and healthy although tapping is extremely heavy. However, bark removal is very good.

In 1924, this division shipped 15,000 tons of rubber of which 10,000 tons came from Pontianak. In 1922 only 2,500 tons were sent from this port and in 1923 about 5,000 tons. It seems that maximum output has been reached for the present and that no further sensational rises need be feared until 1930, providing the labor question does not form an obstacle. Wages are as high as 50 guilders a month in some places, although in others as little as 10 guilders is paid.

There too, the buying up of rubber is exclusively in the hands of Chinese. The business amounts in most cases to barter; the articles taken in exchange are fancy tinned foods, luxury goods, liquor, besides necessaries.

Most of the rubber goes to Singapore where it enjoys a good reputation owing to its purity and comparatively low water-content. After Bangkalis rubber, the Pontianak product is the best received at Singapore; then follow Banjermassin and Palembang; Djambi rubber is the worst.

Areas and Production of Rubber

Temporary figures of the outputs and acreages of rubber estates on the East Coast of Sumatra have been published by the Trade Association of Medan for 1924. The total area under rubber in this district, including the East Coast of Achin came to 169,315 hectares (hectare equals 2.5 acres) of which 129,728 hectares were in bearing. The output was 43,337,791 kilos.

Divided according to nationality we get the following:

	Area Hectares	Area in bearing Hectares	Output Kilos
British	48,494	37,462	11,375,951
Dutch	49,234	40,445	12,848,933
Dutch-Indian	9,308	6,923	2,411,797
Franco-Belgian	19,803	16,667	6,158,814
American	29,108	21,638	7,882,267
Japanese	4,769	1,588	559,869
Others	1,599	5,005	2,100,158
Total	169,315	129,728	43,337,791

Compared with data for 1923, areas have increased, particularly in the case of the acreage in bearing which was 116,000 against 129,000 hectares for 1924. The extent of immature land is therefore only 40,000 hectares and of this amount, a large part will soon be tappable, as about 24,000 hectares were planted in 1918-1919. It may consequently be taken for granted that production and shipments will show a considerable increase in 1925 so that the total exports for this year may run up to about 65,000 tons.

The Rubber Producers Association has issued the following figures, in bouws (bouw = 1.74 acres) of newly planted areas for large estates in the Netherlands East Indies:

		Java	Sumatra and Outer Possessions	Total
Planted at the end of	1920	221.657	275,373	497,030
Additions in	1921	10,193	12,647	22,840
	1922	3,456	9,308	12,764
	1923	2.672	3,350	6,022
	1924	3,379	13,089	16,468

The total additions for the four years, 1921 to 1924, are therefore: Java, 19,700 bouws; Sumatra and outer possessions, 38,394 bouws; altogether 58,094 bouws.

Tax on Native Rubber

A Government decree of May 13, 1925, imposes a tax of 5 per cent on native rubber and gutta percha exported from any part of the Netherlands East Indies except Java, Madura, Bali, Lombok, and certain free ports, after June 1, 1925.

The tax is calculated on the value which for the present is fixed at 100 guilders per picul (picul = about 133⅓ pounds) for dry rubber (crêpe, sheet and blanket); 75 guilders per picul for wet rubber (slabs), and 50 guilders per picul for the inferior grades as scraps, bark, etc. The value for Djambi wet rubber has been put at 60 guilders per picul instead of 75 guilders.

Plantation rubber is exempt from this duty and special certificates of exemption will be issued.

Government Gutta Percha Output

The output of gutta percha on the government estates in Java is estimated at 35,000 kilos for 1926. The production did not increase as rapidly as was expected, therefore the 1926 estimate has been placed lower than that for 1925. However, the price for this article has risen considerably and a price of 6.50 guilders per kilo is counted on for next year.

Rubber Patents, Trade Marks and Designs

The United States

June 16, 1925*

1,541,810 Bathing cap. Margaret Hamilton, Memphis, Tennessee.
1,541,839 Electric lamp device with rubber grip. Lawrence W. Metzler and Walter L. Metzler, both of Topeka, Kansas.
1,541,949 Demountable rim. Chester N. Hauffe, Columbus, Ohio.
1,542,003 Hollow play ball. Ralph E. Riley, assignor to The Miller Rubber Co., both of Akron, Ohio.
1,542,103 Skate wheel with rubber treads. Alvin H. Shoemaker, Seattle, Washington.
1,542,533 Necktie frame with elastic cord. Paul A. Slemp, New York, N. Y.
1,542,547 Kite balloon. Herbert Gray Gibbs, London, England.
1,542,561 Sanitary rubber cover for pillows. Benjamin Laskin and Herbert J. Biberman, both of Philadelphia, Pennsylvania.

June 23, 1925*

1,542,926 Tire pressure gage. Park E. Welton, Cuyahoga Falls, Ohio, assignor to Tiregage Valve Corporation, Charleston, West Virginia.
1,542,943 Shock insulated vehicle wheel. Walter S. Josephson, New York, N. Y., assignor to George Whitaker Morley and Robert Roy Armstrong, trustees, both of Toronto, Ontario, Canada.
1,543,003 Non-skid fabric shoe. Jules C. Gindraux, Spokane, Washington.
1,543,024 Heel plate for rubber heels. William Alexander Morris, El Reno, Oklahoma.
1,543,133 Billiard and pool table cushion with an elastic band. Frederick W. Tilley, Hamilton, Ontario, Canada.
1,543,151 Tire blow out shoe. Alva Heywood Cooper, Atlanta, Georgia.
1,543,558 Faucet connector with a sleeve including a cylindrical body of soft rubber. William Gustav Donald, Oakland, California, assignor to Sanitary Drain Flusher, Inc., a corporation of Delaware.
1,543,559 Filler with body member of vulcanized fabric for the clamped ends of belts. Walter W. Donnelly, Fort Worth, Texas.
1,543,573 Foot arch brace comprising an elastic band and a pad. George H. Jung, Jr., Cincinnati, Ohio.
1,543,653 Restraining body bed brace with elastic body band. Elizabeth Bagnor, Pittsfield, Massachusetts.

June 30, 1925*

1,543,724 Rubber football. Fred Thomas and William E. Roberts, of Yonkers, New York, assignors to Paramount Rubber Consolidated, Inc., Tuckahoe, New York.
1,543,878 Demountable rim. Elver E. Sawtelle, Des Moines, Iowa.
1,543,912 Rubberized fabric doorcheck strap. John R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.
1,543,954 Toy balloon. John W. Shira, assignor to The Oak Rubber Co., both of Ravenna, Ohio.
1,544,032 India rubber washers provided with shock absorber for vehicles. Henry Charles Alexander Potez, Lavallois-Perret, France.
1,544,209 Ventilator. Paul A. Bernhardt, Milwaukee, Wisconsin, assignor to Loeffelholz Co., both of Milwaukee, Wisconsin.
1,544,372 Metal block for pneumatic tired wheels. Lester E. Campbell, Mobile, Alabama.
1,544,375 Expansible truck tire rim. William Henry Cook, Lee, Massachusetts.

Reissues

16,104 Horseshoe pad. Serial No. 704,564, filed April 7, 1924. George J. Heymoss, Jr., Detroit, Michigan.

July 7, 1925*

1,544,547 Pneumatic arch support. George S. Barker, Denver, Colorado.
1,544,587 Detachable rubber heel for shoes. Ladislav Misura, Newark, New Jersey.
1,544,597 Rim with removable ring. Frederick C. Peace, Atlanta, Georgia.
1,544,639 Cushion tire. Fred D. Fowler, assignor to The Hood Rubber Co., both of Watertown, Massachusetts.
1,544,641 Rubber stocking ankle reducer. Victor Guinzburg, assignor to I. B. Kleinert Rubber Co., both of New York, N. Y.
1,544,672 Tubular rubber swimming collar. Seth R. Milbury, Irvington, New Jersey.
1,544,706 Shower bath device with a flexible tube. Nannie L. Wallen, Chicago, Ill.
1,544,770 Scabbard with elastic strap for ice skates. Edwin B. Nathan, Yonkers, New York.
1,544,826 Cover for spare tires. Thomas D. Foley, Omaha, Nebraska.
1,544,835 Windshield cleaner. Arthur Samuel Greenberg, Baltimore, Maryland.
1,544,925 Goggles with elastic headband. Samuel Nelson, Waterloo, Iowa.
1,545,056 Rubber cushion connection for vehicle construction. Alfred F. Masury and August H. Leipert, assignors to International Motor Co., all of New York, N. Y.
1,545,057 Rubber cushion connection for vehicle construction. Alfred F. Masury, assignor to International Motor Co., both of New York, N. Y.
1,545,062 Rubber heel. Patrick F. O'Leary, Cleveland, Ohio.
1,545,093 Rubber shower bath curtain. George Gallob, Brooklyn, New York.
1,545,102 Atomizing stopper for bottles. Thomas J. Holmes, Boston, Massachusetts.
1,545,236 Rust resistant liner for automobile rims. George F. Couchey, assignor of one-half to A. G. Summerell, both of Vermillion, Ohio.
1,545,277 Fountain pen. Abraham Pollok, assignor to Samuel Kanner, both of New York, N. Y.
1,545,399 Attachment for fountain pens. Howard J. Clennan, Avant, Oklahoma.
1,545,436 Nursing bottle and nipple. Lacie A. McGeary, Parkersburg, West Virginia.
1,545,446 Folding bathtub support for infants. Edwin E. Paulet, St. Paul, Minnesota.

*Under Rule No. 167 of the United States Patent Office, the issue closes weekly on Thursday, and the patents of that issue bear date as of the fourth Tuesday thereafter.

The Dominion of Canada

June 9, 1925

250,436 Horseshoe pad with rubber filling. Frederick Conrad Robertson, Spokane, Washington, and Philip Patrick Rooney, New York, N. Y., both in the U. S. A.
250,454 Golosh formed from rubber in one piece. Morland Micholl Dessau, London, England.
250,455 Container for corrosive liquids, with connecting rubber bag. Kenneth Essex Edgeworth, London, S. E. 18, England.

June 16, 1925

250,639 Photographic process involving the use of gutta percha. Charles Beebe Murray and Alexander Murray, both of Cincinnati, Ohio, U. S. A.
250,699 Dust cap for tire valves. Charles Jasper McBurney, Winnipeg, Manitoba, Canada.
250,748 Rubber garment. The Dominion Corset Co., assignee of Louis, J. A. Amyot, both of Quebec, Canada.
250,783 Hollow rubber ball. A. G. Spalding & Bros. of Canada, Ltd., Brantford, Ontario, Canada, assignee of Addison T. Saunders, Akron, Ohio.

June 23, 1925

250,973 Rubber belting. The Security Rubber & Belting Co., assignee of James W. Mowrey, both of Chicago, Illinois, U. S. A.
251,004 Automobile rim. James G. Tait, Howard B. Wallace and Edward I. Jonssens, as trustees of The Simply Quick Rim Co., all of Hollywood, California, U. S. A.

June 30, 1925

251,092 Device for securing fractured casings to rims. John Andrew Graham, Woodville, Ontario, Canada.
251,094 Jointed toy figure fastened together by an elastic member. Rene D. Grove, Middleton, Pennsylvania, U. S. A.
251,133 Fountain brush with an elastic band. James Bidwell Mills, Toronto, Ontario, Canada.
251,173 Surgical truss. Frederick Schutze, London, N. 7, England.
251,279 Tire rim. The McNamara Motor Wheels, Ltd., assignee of Russell E. McNamara, both of St. Mary's, Ontario, Canada.
251,288 Endless inner tube. The Quebec Rubber Co., Ltd., Quebec, assignee of The Quebec Sales Co., Ltd., assignee of Harry M. Richardson, assignee Horace Hillyard Hastings, last three of Toronto, Ontario, all of Canada.

July 7, 1925

251,329 Infants' feeding bottle. Richard Stanley and Albert Walton Dowell, both of London, E. 5, England.
251,331 Anti-slip shoe sole. Harry Alfred McKnight and Frank Ellis Burns, co-inventors, both of San Francisco, California, U. S. A.
251,371 Paving block partly made of a rubber slab. Lucien Gaisman, Manchester, County of Lancaster, England.
251,510 Rim for pneumatic tires. The Dunlop Tire & Rubber Goods Co., Ltd., Toronto, Ontario, Canada, assignee of Colin Macbeth and John Thomas Turney Randles, both of Birmingham, County of Warwick, England.
251,523 Belt of fabric united by a vulcanized material. The Goodyear Tire & Rubber Co., assignee of Elinor Gairing Kimmich, both of Akron, Ohio, U. S. A.
251,561 Paving block with facing pad of rubber. Louis Cox, Birmingham, Warwick, and Edwin John Burt, assignee of one-half of the interest, both in England.

The United Kingdom

June 4, 1925

231,857 Glass or quartz vessel with a coating of vulcanized caoutchouc. Jenaer Glaswerk Schott & Gen., Otto-Schott-Strasse, assignees of C. Zeiss (firm of), Carl-Zeiss-Strasse, both in Jena, Germany.
231,893 Airplane radiators with rubber shock absorbers. Soc. Anon. des Ateliers d'Aviation, L. Breguet, 115 Rue de la Pompe, Paris, France.

Chemical patents will be found on page 659. Machinery and Process Patents on Pages 662-663

231,916 Brick machines using rubber covered rollers. E. G. & M. Normand, 36 Rue de L'Egalite, Caudry, Nord, France.

231,923 Thermionic valve holders consisting of a block of insulating material such as vulcanite. R. Woods, 95 Great Portland street, London.

231,927 Pneumatic suspension for vehicles. C. E. Holden, 28 Wood street, Deansgate, Manchester.

231,942 Pneumatic cushions on coal cutting machines. A. W. Reichwald, Exchange Buildings, Newcastle-on-Tyne (E. Schweitzer, Neukirchen, Moers, Germany).

231,943 Clock work electric valves with rubber disks. W. E. King and Gas Meter Co., Ltd., 238 Kingsland Road, London.

231,957 Gramophone having a tubular rubber connector. C. M. DeC. De La Bourdonnais (Prince De Mahe), Loventor Manor near Totnes, Devon.

231,960 Rubber spring suspensions for vehicles. J. I. Thornycroft & Co., Ltd., Thornycroft House, South Square, Westminster, London, and V. G. Barford, Motor Vehicle & Engine Works, Basingstoke, Hampshire.

231,964 Printers' blankets comprised of a layer of rubber, etc., composition. A. F. Decker, 142 Monterey avenue, Pelham, New York, U. S. A.

231,966 Rubber lining of bands to secure artificial teeth. H. Capleton, 114 South Road, Waterloo, Liverpool.

231,970 Wind screen cleaner. E. Auriero, 696 Myrtle avenue, Brooklyn, New York, U. S. A.

231,981 Pad or squeegee containing a rubber disk for cleaning wireless receiving sets. A. F. Portway, 24 Palace Grove, Bromley, Kent.

231,992 Attachments for tire valves. Dunlop Rubber Co., Ltd., 1 Albany street, Regent's Park, London, and C. Macbeth and A. Kay, Fort Dunlop, Erdington, Birmingham.

232,006 Electric switches with rubber packings. J. H. Gath, 12 Horton street, Halifax, Yorkshire.

232,051 Golf scoring apparatus with rubber stem. T. H. Hart, Handsworth, Birmingham.

232,066 Ventilating hat bands with elastic cords. J. N. Dean, Cheadle Heath Works, Stockport, Cheshire.

232,082 Vehicle bodies with rubber weather strips. F. B. Dehn, 53 Doughty street, London (E. G. Budd Manufacturing Co., 25th street, Philadelphia, Pennsylvania, U. S. A.).

232,093 Non-slipping pad with rubber covering for ladders. S. Percival, 40 Chancery Lane, London (S. Poeymirou, 13 Rue Beaucourt, Lille, France).

232,095 Foot arch support of rubber, etc. L. E. Scrannage, 1020 Lincoln Building, Penn Square, Philadelphia, Pennsylvania, U. S. A.

232,100 Press button electric switches with rubber insulation. E. C. R. Marks, 57 Lincoln Fields Inn, London (National Carbon Co., 30 East 42nd street, New York, N. Y.).

232,106 Locking nuts containing rubber filling. R. M. G. Sobey, 127 Wellington street, Windsor, Victoria, Australia.

232,116 Hand stamps employing a series of strip rubber stamps. F. R. Palmer, 23 Ivy Lane, London.

232,123 Elastic abdominal belts. M. S. Israels, 2 Prinz Mauritzlaan, Bussum, Holland.

232,126 Bath with rubber lining for use in electrical therapeutics. E. R. G. Greville and F. W. Read, 167 Gray's Inn Road, London.

232,128 Brackets with rubber sheaths for lamp or candle, etc., holders. R. J. Ross, 7 Queen's Road, Crosby, near Liverpool.

232,138 Coal bags made from discarded tire covers. J. Hawley & Co., Ltd., and J. W. Hawley, both of Goodall street, Walsall, Staffordshire.

232,143 Windshield cleaner with squeegee. J. F. Monnot, Highwood House, Mill Hill, London.

232,148 Pneumatic cushions. C. F. Heinke & Co., Ltd., and E. C. Lacey, both of 87 Grange Road, Bermondsey, London.

232,171 Detachable rims for wheels. W. Zipper, 120A Haupstrasse, Vienna, Austria.

232,187 Flexible floats of rubber for raising sunken vessels. H. Faure, 4 Avenue Dussap, Toulon, Var, France.

232,218 Wireless receiving system including a rubber cap. E. G. Gage, 41 Garden Place, Brooklyn, New York, U. S. A.

232,247 Tire casings. The E. F. Goodrich Co., 1780 Broadway, New York, N. Y., assignees of I. R. Renner, Medina Road, Fairlawn, Ohio, both in the U. S. A.

232,248 Gear wheel blanks manufactured from tire cord. Thomson-Houston Co., Ltd., Brown House, Aldwych, London, assignees of A. C. Hoof, 255 Park avenue, Hinsdale, Illinois, U. S. A.

232,252 Drop delivery apparatus with rubber stopper and ball. I. Arbatsky, 17 Motzstrasse, Berlin, Germany.

June 10, 1925

232,295 Electrical instrument knobs partly composed of rubber. R. E. Beswick and P. N. Glendinning, both of Cozwhy Works, Connaught Road, Ilford, Essex.

232,297 Apparatus for making book signatures; involving the use of rubber or other adhesive applying strips. J. Murray, 33 Hatton Garden, London.

232,329 Siphon with rubber bulb. J. E. Meir, 243 Swanston street, Melbourne, Australia.

232,376 Machine for testing, packing, etc., eggs, having a rubber inking arrangement. S. Loughran, 66 Clovard Gardens, Falls Road, Belfast, Ireland.

232,382 Splints; artificial limbs with sponge rubber pads. R. Londen, Clerwood, Costorphine, Edinburgh, Scotland.

232,386 Brush with rubber bonnet, for cleaning motor cars. S. W. J. Cook, 7 Davey Place, Norwich.

232,429 Inflating valve plunger with a rubber cap. H. Lewis, 5 Arnside Road, Southport, Lancashire, and Liverpool Rubber Co., Ltd., Vauxhall Road, Liverpool.

232,434 Rubber syringe for applying ointment. G. R. Baxter, 7 Brixton Hill, London.

232,460 Rubber door stop. F. B. Dehn, 53 Doughty street, London. E. G. Budd Manufacturing Co., 25th street, Philadelphia, Pennsylvania, U. S. A.

232,473 Lamp failure alarm with vulcanite plunger. A. Shaw, 6 Brown street, West, and F. Fairer, 13 Reginald street, both in Colne, Lancashire.

232,482 Air vessel, partly made of rubber, for use with artificial silk jumps. C. Sandoz, 11 Rue Monte Rosa, Milan, Italy.

232,493 Ampoule with thin coating of caoutchone. M. Wcelm Aktges, Spangenberg, Hessen, Germany, assignees of M. Hahn, 28A Dorotheenstrasse, Berlin, Germany.

232,498 Tobacco pipe, partly composed of white vulcanite. E. J. Mortimer, 78 Bromham Road, Bedford.

232,501 Mouldings with a trough section of vulcanized rubber for vehicle bodies. H. G. C. Fairweather, 65 Chancery Lane, London. (Dryden Rubber Co., 1014 South Kildare avenue, Chicago, Illinois, U. S. A.).

232,519 Reservoir pens. W. Livsey, 13 Groveland Road, Wallasey, Cheshire.

232,520 Spring suspensions for vehicles. G. Fornaca, 7 Via Giannone, Turin, Italy.

June 17, 1925

232,561 Blow pipe burner with rubber washer. A. B. Drager, Finkenberg, Lubeck, Germany.

232,576 Vehicle wheels with rubber ring cushions, etc. A. F. Fabre, 29 Rue Henri IV., Castres, Tarn, France.

232,597 Inking rollers with rubber bodies. V. M. Dulphy, 9 Rue du Potager, Bourg la Reine, Seine, France.

232,648 Pneumatic springs for vehicles. T. R. S. Kynnersley, Sion, Bombay, India.

232,668 Valves, partly made of rubber, for vent pegs, etc. T. Dudson, 42 High street, Abertridwr, Cardiff, Wales.

232,671 Windshield cleaner and anti-dazzle screen. Bristol Pneumatic Tools, Ltd., The Causeway, Fishponds; L. W. Slade, Sheffield Lodge, Westbury-on-Trym, and J. Roy, 64 Thingwall Park, Fishponds, all in Bristol.

232,755 Powder puff case with rubber lip. H. B. Rogers, 6 Fox Court, Holborn, London.

232,764 Electric conductor with rubber core. Fuller's United Electric Works, Ltd., Woodland Works, Grove Road, Chadwell Heath, and A. F. Welch, Goodmayes, both in Essex.

232,768 Electric resistances composed of an insulating tubular body of vulcanite, etc. T. R. Armstrong, Coventry Road, South Yardley, Birmingham.

232,779 Gaiters composed of a rubber, etc., sleeve for suspension springs. C. R. Little, 5 Primrose Hill street, Coventry.

232,822 Golf tee with molded rubber head and shank. C. F. Bennion, Elmhurst, Budleigh Salterton, Devon.

232,835 Appliance with elastic bands for treating bunions. A. F. Rash, Tower Chambers, Tower street, Ipswich.

232,836 Tubular ring for use in ring tennis. F. L. Sawyer, 12 West 44th street, New York, N. Y., U. S. A.

232,845 Heel pad. A. M. Eichorn, 2815 Grand Concourse, New York, N. Y., U. S. A.

232,882 File with elastic thongs for filing papers, etc. Reed, Graveley & Turner, Ltd., and H. V. N. Graveley, both of Sun street, Finsbury Square, London, and C. T. Brading, 9 Park Lane Mansions, Croydon, Surrey.

232,907 Spongy rubber sound deadening support for typewriter feet. E. Kenngott, 11 Simrockstrasse, Ehrenfeld, Cologne, Germany.

232,957 Tire inflating valves. R. H. Smith and L. H. Keogh, 100 Marine Parade, Napier, New Zealand.

June 24, 1925

233,052 Foot scrapers with rubber straps for running boards of vehicles. W. J. Davy, 28 Stanhope Gardens, Highgate, London.

233,066 Sprocket wheel ring connected to hub by rubber ring. Sir E. Jardine, Deering street, Nottingham, and I. Cohen, 41 Gertrude Road, West Bridgford, Nottinghamshire.

233,075 Flower holders, partly composed of rubber. A. A. D. Lang, 42 Berners street, London.

233,113 Brush handles. L. Lockwood, 33 Wards Road, Seven Kings, Essex. (Brosserie Bruxelloise, Vilvorde, Belgium).

233,125 Fabric for brake, clutch, etc., linings. E. J. Trainor, 111 Bedford avenue, Brooklyn, New York, U. S. A.

233,130 Fittings for braces, belts, etc., for personal wear, from vulcanite molded into an endless channel form. T. Walker, Ltd., Brook Street Works, St. Pauls Square, Birmingham; H. Margetson, 16 Moor Lane, Fore street, London, and T. Walker, of the Birmingham address given above.

233,135 Milk churn with rubber rings and a rubber sleeve. A. S. F. Robinson, White House, Eorsham, Beccles, Suffolk.

233,193 Inflatable toy. P. Biaz, Ebner Buildings, Harrisburg, Pennsylvania, U. S. A.

233,224 Elastic fabrics. W. Kops, 525 West End avenue, New York, N. Y., U. S. A.

233,225 Fire extinguishing apparatus with flexible pipes. W. O. Kelley, 476 Austin street, and G. T. Simon, 733 Saline Pass avenue, both in Beaumont, Texas, U. S. A.

233,241 Paper machines partly composed of hard and of soft rubber. C. R. Seaborne, 683 North street, Appleton, Wisconsin, U. S. A.

231,914 Rubber in tool for removing pistons. E. Vanderstegen, 296 Oxford Road, Reading, Berkshire.

231,915 Bowden, etc., mechanism using a rubber grip. H. T. Laslett, 9 Price's avenue, Cliftonville, Kent.

233,290 Hat bandeaux with elastic insertion. Thornly & Booth, Ltd., and S. Thornley, Boston Mills, Hyde, Cheshire.

233,293 Puncture closing devices for vehicle wheels. A. Omand, 195 Danforth avenue, and R. C. Lambert, 38 Sparkhill avenue, both in Toronto, Ontario, Canada.

233,315 Bottle with perforated rubber cap for massage. Van Ess Laboratories, Inc., 28 East Kinzie street, Chicago, Illinois, U. S. A.

July 1, 1925

233,380 Wind or weather screen for baby carriages, with waterproof apron. A. L. Chatfield, 155 High street, Sevenoaks, Kent.

233,387 Inflatable pads to support the arch or the entire foot, T. F. Farrimond, 99 Abbey House, Westminster, London, and J. H. Hoseason, 28 Church street, Hampton, Middlesex.

233,388 Reservoir pens. F. Turner, 27 Finch Road, Canning Town, London.

233,396 Rubber mitten with ribbed surface for washing clothes. H. D. Robertson, Rodney House, Ambleside, Westmoreland.

233,444 Tool for forcing a wired tire on to a perambulator wheel and for removing tire. G. Henman, 18 Foster Hill Road, Bedford and W. Petrie & Co., Ltd., 2 Tudor street, London.

233,493 Elastic rubber film package for dental Röntgen-ray work. Victor X-Ray Corporation, 236 South Robey street and L. M. Bolin, 1812 North Albany avenue, both in Chicago, Illinois, U. S. A.

233,523 Press roll with a hard exterior ebonite layer and layers of soft and of hard rubber, for printing machines. F. Reddaway, Cheltenham street, Pendleton, Manchester.

233,537 Machine for making holes in V-shaped driving belts. Dunlop Rubber Co., Ltd., Albany street, Regent's Park, London, and G. A. Mortier, Fort Dunlop, Erdington, Birmingham.

233,538 Pneumatic sole or heel, partly of rubber, for boots, etc. J. T. Harrison, Sapphire, North Carolina, U. S. A.

233,549 Device for detachably securing a boot, etc., heel. C. T. A. Shearer, Elleray, Hayes, Kent.

233,552 Pneumatic rubber feet for typewriter supports. E. Hirsch, 36 Dorotheenstrasse, Berlin, Germany.

233,587 Spring suspension comprising pneumatic tubes or bags for vehicles. H. F. Cleeve, 89 Washington street, Jamaica, Long Island, New York, N. Y., U. S. A.

233,614 Thermionic valve holders with spongy rubber shock absorbers. Sterling Telephone & Electric Co., Ltd., T. D. Ward-Miller, W. M. Holbeach, and R. C. Jones, 210 Tottenham Court Road, London.

233,644 Rotating lamp with rubber ring for vehicles. Aero Motor-u Auto Zuberhor Akt.-Ges., 4 Kaiserin Augusta Allée, assignees of K. F. Nagele, 38 Saalestrasse, Neukolin, both in Berlin, Germany.

233,673 Wheel tires. E. Bugatti, Mosheim, Bas-Rhin, France.

New Zealand

May 7, 1925

51,926 Rubber bulb in milk sediment tester. Edward Charles Alexander, 159 Washington avenue, Brooklyn, Wellington.

53,593 Float and paddle having an inflatable bladder. Andrew Gibson, Kingston, Gilroy Road, Turramurra, near Sydney, New South Wales.

53,671 Ring of rubber tubing in sheet-metal forming. Arthur Edward Cutler and Philip Allan Marsden, both of Walsh Island, Newcastle, New South Wales.

June 4, 1925

51,745 Milking machine teat cup with specially molded rubber inflation. Charles Frederick Claasen, of Rawene, Hokianga, Auckland.

53,774 Concrete culvert construction; bore with outer tube of india rubber or other elastic substance. Toichi Nose, of 86 Nikaido, Kamakura Machi, Kamakura Gun, Kanagawa Ken, Japan.

June 18, 1921

52,170 Notebook cover consisting of sheets of metal or vulcanite, etc. Arthur Johnson Gradwell and Daniel Gerald McSweeney, both of Warren's Buildings, Wharf street, Brisbane, Australia.

52,785 Rubber heel. Leopold Van Roy, 21 Rue des Eperonniers, Bruxelles (Brussels), Belgium.

53,661 Hose-pipe connection adapted to hold a rubber ring. Harold Leslie Augustus Bunbury, 126 Finch street, East Malvern, Victoria, Australia.

Germany

415,750 (June 1, 1924). Solid tire. Leo Grossmann, Dorfstrasse 36, Berlin-Mariendorf.

415,799 (October 1, 1924). Rupture band. Karl Krudewig, Delmenhorst i. O.

416,012 (June 24, 1924). Rubber elastic sleeve holder. Casman, Villbrandt & Zehnder A.-G., Elberfeld.

416,032 (August 23, 1924). Washing glove of sponge rubber. Hans Papproth, Pragerstrasse 15, Dresden.

416,238 (September 14, 1924). Rubber tread patch. Otto Kombrink, Bad Rothenfelde, Teutoburger Wald.

416,265 (November 5, 1924). Hollow rubber stopper for butyrometer and the like. Paul Funke & Co., G. m. b. H., Berlin.

416,470 (March 15, 1921). Pneumatic tire. William Beach Pratt, Wellesley, United States. Represented by G. Benjamin and H. Wertheimer, Berlin S. W. 11.

416,480 (September 3, 1921). Tire carcase. The Yoder Morris Company, Cleveland, Ohio, United States. Represented by G. Benjamin and H. F. Wertheimer, Berlin S. W. 11.

Trade Marks

The United States

Two Kinds of Trade Marks Now Being Registered

Under the rules of the United States Patent Office, trade marks registered under the Act of February 20, 1905, are, in general, fanciful and arbitrary marks, while those registered under the Act of March 19, 1920, Section 1 (b), are non-technical, that is, marks consisting of descriptive or geographical matter or mere surnames. To be registered under the latter act trade marks must have been used for not less than one year. Marks registered under this act are being published for the first time when registered, any opposition taking the form of an application for cancellation.

June 16, 1925, Act of February 20, 1905

199,597 The word: 3MORE, the first letter is larger than and extends below the others—narrow elastic webs. Penn Rivet Corporation, Philadelphia, Pennsylvania.

199,617 PRACTIPEDIC—shoes, boots and slippers of leather or leather in combination with elastic, and with rubber heels. Scholl Manufacturing Co., Inc., Chicago, Illinois.

199,625 A square enclosing the words: 1924, B.I.R.G. and Riga arranged in a column. Under the square is the word QUADRAT. A second design is copyrighted which differs from the preceding only in that the square is surrounded in horseshoe effect by the words Balt. India Rubber Comp., the first and last letters of which title reach to the word quadrat under the square—rubber overshoes. Baltic India Rubber Co., "Quadrat," Riga, Latvia.

199,640 Oval with word DOLAIS in script on black background and "made in Switzerland" printed outside and underneath rim of oval—boots and shoes made of rubber and other fabrics. Societe Anonyme C. F. Bally, Schoenwerd, Switzerland.

199,701 PLAY PAL—shoes of leather, fabric, rubber or rubber composition. Shaft-Fierce Shoe Co., Faribault, Minnesota.

199,702 A laurel wreath, open at the top, enclosing the words: The Merritt Shoe, in column, the word: MERRITT being in old English letters. Under wreath are the words "From maker to you"—leather, fabric and rubber shoes and combinations thereof. Abraham Dvilnsky doing business as The George Merritt Shoe Co., Brockton, Massachusetts.

199,718—SYLVAN in outline letters—leather or a combination of leather, rubber or fabric shoes. Sylvania Shoe Co., Philadelphia, Pennsylvania.

199,727 SWAT KING in white upon a black background—shoes with rubber soles and heels. Teeple Shoe Co., Waupun, Wisconsin.

June 23, 1925, Act of February 20, 1905

199,931 RE-ROOFERS—prepared roofing products, composition shingles. The Ruberoid Co., Boundbrook, New Jersey, and New York, N. Y.

199,957 UNICORD—woven cord fabrics for manufacture of tires and fabric belting. Textiles Development Corporation, New York, N. Y.

199,963 The word ADMIRAL in outline letters, the word running slightly upwards and underlined; at right a small circle enclosing the fancy letter A; underneath the words Admiral Tire & Rubber Co., Saint Louis, U. S. A., all enclosed in oblong square—rubber inner tubes and automobile tires made of rubber or of a rubber and cotton fabric. Arthur A. Guenther doing business as Admiral Tire & Rubber Co., St. Louis, Missouri.

199,966 The figures 96 divided by and attached to a center column and repeated three times, one set above another; figures and column both in outline—rubber tires. The Fisk Rubber Co., Chicopee Falls, Massahusetts.

200,004 PERFOLASTIC, letters outlined in dots to resemble perforations—rubber and cloth elastic girdles. Perfolastic, Inc., New York, N. Y.

200,020 The word: HOLTITE in outline letters above a shaded circle upon which is a left fist gripping a short round bar—rubber heels and soles. Holtite Manufacturing Co., Baltimore, Maryland.

200,034 The word: CALLAMILL in black letters in the center of an outline diamond. Above the word is an outline triangle or half diamond enclosing the word in small type: cords,—below, the other half diamond enclosing the words; tire fabrics—cord and other fabrics used for vehicle tires. Unity Cotton Mills, La Grange, Georgia.

200,049 LEEBESTOS in regularly broken letters—brake linings. Lee Rubber and Tire Corporation, New York, N. Y.

200,070 Design comprising an oval surmounted upon a large and small triangle—tire chains. Hoff Metal Products Co., New York, N. Y.

200,101 JIFFY—sanitary bloomers. I. B. Kleinert Rubber Co., New York, N. Y.

200,109 ATLAS—the first and last letters lengthened and connected at bottom to form a foundation—pneumatic tube systems. G. & G. Atlas Systems Inc., New York, N. Y.

June 23, 1925, Act of March 19, 1920

200,152 PAY-AS-YOU-RIDE in white letters upon an oblong black background—automobile tires. T. C. Probey Co., Inc., assignor to Probey's Incorporated, both of Washington, D. C.

June 30, 1925, Act of February 20, 1905

200,299 FEATHERETTE—dress shields. I. B. Kleinert Rubber Co., New York, N. Y.

200,300 VELVYTTE in script with the top of the first letter extended to encircle the other letters—dress shields. I. B. Kleinert Rubber Co., New York, N. Y.

200,374 Design comprising a hand with pointing forefinger superimposed upon the sole of a bare foot—shoes, boots and slippers of leather or leather in combination with rubber heels. Scholl Manufacturing Co., Inc., Chicago, Illinois.

July 7, 1925, Act of February 20, 1905

200,551 ARYEN—rubber stamps, freight-marking type, etc. Barnard Stamp Co., St. Louis, Missouri.

July 7, 1925, Act of March 19, 1920

200,794 RENWICK, letters arranged in slight curve—bathing caps, raincoats and non-rubber articles of clothing. Syracuse Dry Goods Co., Syracuse, New York.

The Dominion of Canada

Registered

37,879 The word: OUTEX—waterproofing compounds and paints and other finishes treated thereby. Outex Waterproofing Co., Ltd., Toronto, Ontario.

37,971 Words "ANNETTE KELLERMANN"—bathing bags, caps, tights, scarves, etc. for women, misses and children. The Asbury Mills, Borough of Manhattan, New York, N. Y., U. S. A.

37,982 Label bearing words "UTILITY," "NATBERRY," "GARMENT" and "MADE OF ENGLISH WOOLLENS"—ladies' coats. National Rubber Company of Canada, Montreal, Quebec.

38,002 Word: C—TERU, the letters C and T are capitals—rubber nursing nipples and surgical gloves. The Pyramid Rubber Specialty Co., Ravenna, Ohio, U. S. A.

The United Kingdom

June 3, 1925

456,014 Representation of a white swan floating upon a stream against black rushes. Over the figure are the words: The SWAN in white letters on a dark ground and below, the word: ELASTIC in black letters on a light ground; all inclosed in a fancy oblong square; in very small type above are the words: Best Para Rubber and below. No., Cord, Grs. and Made in England—Wilfred Ernest Swann, trading as John Swann & Sons, Ashforth Street Mills, Nottingham.

458,225 EMPRESS—fountain pens, erasers, etc.—The Mentmore Manufacturing Co., Limited, Tudor Grove, Well Street, Hackney, London E. 9.

June 17, 1925

B454,892 CHAMPION—india rubber tyres for cycles. W. & A. Bates, Limited, St. Mary's Mills, off Narborough Road, Leicester.

457,045 PREMIER—waterproof and rainproof garments. Premier Garments, Limited, Premier Works, Derby street, Cheetham, Manchester.

458,396 "KANTSLIB"—all goods included in class 11. William James Mayscy, trading as The Mid-Surrey Rubber Co., 42b Kew Road, Richmond, Surrey.

June 24, 1925

456,477 ZINCAZOL—chemical substance (for registrants) as accelerating agents in vulcanization of india rubber. Ernest Smith, Paget Street Works, Paget street, Collyhurst, Manchester.

457,183 RESILION—cushions, pads, etc., made wholly or principally from spongy india rubber or gutta-percha for saddles, seats, etc., but not for boots or shoes. Louis Thomas Marr, 6 Park avenue north, Hornsey, Middlesex.

457,783 PARANETTE—waterproof clothing. Emeralda, Limited, 19, The Hayes, Cardiff.

458,408—BELDAMIANTE—laggings or coverings included in Class 1 for preventing radiation or conduction of heat. The Beldam Packing & Rubber Co., Limited, 29 Gracechurch street, London, E.C.3.

458,409 BELDAMIANTE—engine and machine packings, and jointings included in Class 50. The Beldam Packing & Rubber Co., Limited, 29 Gracechurch street, London, E.C.3.

July 1, 1925

B453,501 PHILLIPS—india rubber plates or pads for the soles or heels of boots and shoes. Phillips' Patents, Limited, 142 to 146 Old street, London, E.C.1.

New Zealand

22,285 STELLA—Elastic cords, braids, webs, and other similar elastic goods made entirely or mainly from rubber. Archibald Turner & Co., Ltd., 7 Jewin street, London, E. C. 1, and Bow Bridge Works, 3 King Richard's Road, Leicester, both in England.

Designs

67,571 Overshoe. Term 14 years. George W. Blair, assignor to Mishawaka Rubber & Woolen Manufacturing Co., both of Mishawaka, Indiana.

67,614 Cushion tire. Term 3½ years. Robert M. Pierson, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

67,669 Tire tread. Term 7 years. Robert M. Merriman, Akron, Ohio.

67,688 Rubber doll. Term 14 years. Albert J. Eldon, Mount Vernon, assignor to The Hodgman Rubber Co., Tuckahoe, both in New York.

67,712 Shoe heel. Term 14 years. Ward Melville, New York, N. Y.

67,728 Tire tread. Term 7 years. John Thompson, Philadelphia, Pennsylvania.

67,729 Vehicle tire tread. Term 14 years. Reginald H. Waters, Cumberland, Maryland, assignor to Kelly-Springfield Tire Co., New York, N. Y.

67,739 Rubber shoe. Term 14 years. George W. Blair, assignor to Mishawaka Rubber and Woolen Manufacturing Co., both of Mishawaka, Indiana.

The Dominion of Canada

6723-6725 Tires. Canadian Consolidated Rubber Co., Limited, Montreal, Quebec.

Germany

907,182 (March 26, 1925). Syringe. Mathias Czech, Vienna; represented by Dr. R. Geissler, Berlin, S. W. 11.

907,183 (March 26, 1925). Solid tire. The Dunlop Rubber Co., Limited, London; represented by Dr. R. Wirth, C. Weihe, Dr. H. Weil, M. M. Wirth, of Frankfurt am Main, and T. R. Koenhorn and E. Noll, Berlin, S. W. 11.

907,282 (March 25, 1925). Rubber writing pad. Gummiwarenfabrik M. Steinberg, Köln-Lindenthal.

907,349 (February 20, 1925). Bust and abdomen confiner of rubber. Hanna Valeska Westphal, Frankenallee 83, Frankfurt am Main.

907,414 (March 20, 1925). Sweeping surface of crimped rubber for brooms, brushes and scrubbers. August Don, Wermelkirchen.

907,415 (March 20, 1925). Pneumatic, elastic, sponge rubber in-sole. W. Goy & Co., Frankfurt am Main.

907,431 (March 24, 1925). Rubber map. Gummiwarenfabrik M. Steinberg, Köln-Lindenthal.

907,555 (March 19, 1925). Closing for rubber football bladders. Wilhelm Hinsdorf, Rethen an der Aller.

907,589 (March 30, 1925). Shoe. Belinde-Werke A.-G., Wandsbek.

907,847 (April 1, 1925). Rubber broom. Paul Franzen, Comphausbadstrasse 30, Aachen.

907,895 (March 5, 1925). Waterproof heating cushion with connected waterproof rubber cable cover. Curt Kohle, Wettinerstrasse 34, Halle a. S.

908,109 (January 24, 1925). Device at ends of ski-sticks with rubber handles. Adolf Marquardt, A.-G., Heilbronn a. N.

908,144 (March 20, 1925). Sponge rubber frame for protective eyeglasses. Hugo Claus, Haydnstrasse 10, Dresden.

908,225 (February 21, 1925). Bathing shoe. Gummiwarenfabrik. M. Steinberg.

908,226 (February 21, 1925). Rubber corset. Ella v. Pazsiczky, née Lehmert, Wandsbek.

908,230 (March 2, 1925). Rubber heel. Gustav Horstmann, Altona an der Elbe.

908,333 (March 10, 1925.) Hygienic suspensory. Louis Iklé, Klosterstrasse 71, Köln-Lindenthal.

908,370 (March 28, 1925.) Baby carriage tire. Paul Wendisch, König-Johannstrasse 22, Leipzig.

908,383 (April 2, 1925). Slipper with rubber sole. Harburger Gummiwaren-Fabrik, Phoenix A.-G., Harburg an der Elbe.

908,397 (April 4, 1925). Exchangeable rubber sucker for artificial teeth. Dr. Richard Heppe, Wernigerode.

908,466 (March 25, 1925). Bicycle tire. Hubert Schmitz, Gruiten, Rheinland.

908,541 (March 25, 1925). Decorative apron. Radium-Gummiwerke m. b. H., Köln-Dellbrück.

908,543 (March 30, 1925). Sporting rifle with rubber band. Paul Schönfeld, Prinzenstrasse 26, Chemnitz.

908,632 (February 2, 1925). Solid rubber suspender. Ernst Held, Fürtherstrasse 191, Nürnberg.

908,664 (March 24, 1925). Pocket inhaler. Julius Brückner & Co. G. m. b. H., Ilmenau.

908,691 (April 4, 1925). Rubber covered handle for pneumatic tools and the like. G. A. Schütz, Würzen, i. S.

908,718 (December 5, 1924). Saddle for motorcycles and bicycles. Georg Mehltreter, Rumfordstrasse 32, Munich.

908,776 (April 2, 1925). Lathe key with lentil-shaped rubber heads. Lachappelle Holzwerk-zeugfabrik A.-G., Kriens-Luzern, Switzerland. Represented by Dr. Hauser, Berlin, S. W. 48.

908,777 (April 2, 1925). Lathe key with ball-shaped rubber heads. Lachappelle Holzwerkzeugfabrik. A.-G., Kriens-Luzern, Switzerland. Represented by Dr. Hauser, Berlin, S. W. 48.

908,811 (December 7, 1923). Toy figure of sponge rubber. Herbert Lindemann, Dovenfleth 20, Hamburg.

908,910 (March 31, 1925). Sponge rubber articles with colored designs. Harburger Gummiwaren-Fabrik, Phoenix A.-G., Harburg an der Elbe.

908,937 (April 9, 1925). Swimming and diving toy figures of rubber. Carl Fritz, am Weingarten 12, Frankfurt am Main.

908,950 (April 15, 1925). Protective tire. Berlin-Rixdorfer Gummiwaren-Fabrik, Hans Schumann, Berlin.

909,001 (March 13, 1925). Balloon in the shape of a pig. Gummiwarenfabrik bei Melle Wortmann & C. Bösch, Melle.

909,057 (April 6, 1925). Waterproof rubber heating cushion. Willy Radsch, Jakobstrasse 18, Halle an der Saale.

909,084 (April 9, 1925). Rubber massage plaque. Franz Etienne, Burkleinstrasse 7, Munich.

909,120 (February 24, 1925). Roll with endless sponge rubber cover, for moistening soles in the mechanical manufacture of shoes. Maier & Remshardt, Heilbronn a. N.

909,202 (April 14, 1924). Cystoscopic catheter. Georg Wolf, G. m. b. H., Berlin.

909,210 (September 23, 1924). Garment shield of crimped rubber. Firma Carl Plaat, Köln-Nippes.

909,225 (February 27, 1925). Disk ring of rubber for use in making teneriffe work. Gerhard Bauer, Rödings-markt 75, Hamburg.

909,326 (February 28, 1925). Injection syringe. Dewitt & Herz, Berlin.

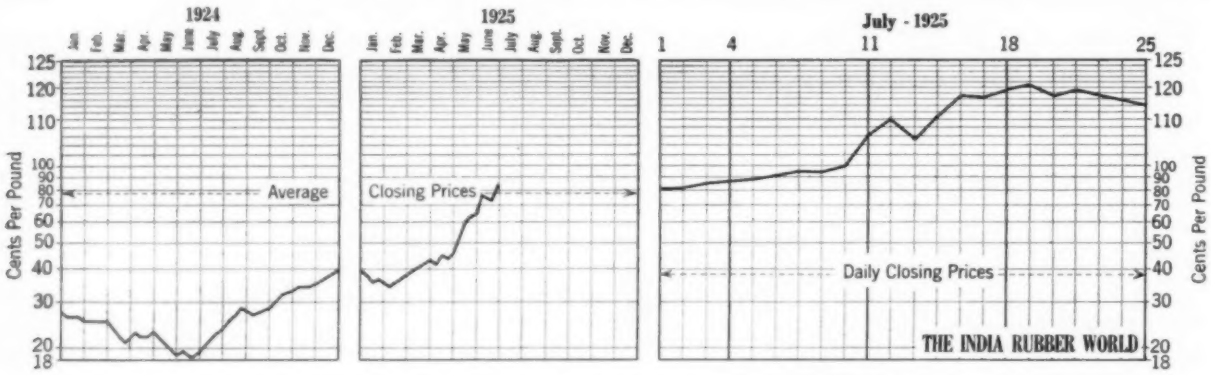
909,348 (March 26, 1925). Bathing bag. Vereinigte Berlin-Frankfurter Gummiwaren-Fabriken, Berlin-Lichterfelde.

909,535 (December 11, 1924). Exchangeable rubber heel. Gideon Grotefend, Heidenkampsweg 118 B., Hamburg.

Labels

The United States

28,843 HICKORY SHIRRED ELASTIC—elastic. A. Stein & Co., Chicago, Illinois.



Ratio Graph of New York Closing Prices of Spot Ribbed Smoked Sheets

Review of the Crude Rubber Market

New York

The rubber market during July was characterized by a sharp rise of prices in all positions. July 20 spot ribs reached $1.21, the level that prevailed in August, 1914, when the War began. The strong consuming demand preceding this peak, for rubber in all positions, stimulated speculation, profit taking and a generally excited market, demonstrating the acute shortage of stocks with which rubber manufacturers are confronted.

The price of rubber having averaged above 1*s* 6*d* for the past 3 months, it is a foregone conclusion that the British Colonial office will permit the exportable allowance to be increased to 75 per cent under the Stevenson plan. This increase of 10 per cent means an extra monthly supply of 2,550 tons for August, September and October. If for that period of time the price averages above 1*s* and 6*d*, a further release of 10 per cent will be made, raising the exportable allowance to 85 per cent of standard production.

During the past month permission was granted by the government authority, for the shipment from Malaya of 5,000 tons of Chinese rubber on payment of the maximum export duty of 24 cents gold a pound. This is reported to be a mixed lot and so difficult to sell in this market, which already holds a surplus of roll brown grade, that it is a question if it ever will be shipped. Therefore, it does not relieve the situation.

The week beginning the last of June, spot ribbed smoked sheets opened firm at 83½ buyers, 84 sellers. A slight decline caused by light demand and profit-taking was succeeded at the close of the week in sympathy with London and a fair factory demand. The week closed at prices slightly above those at the opening.

The market of week ended July 11, showed a tight squeeze for July rubber, active factory demand, very little spot available. These conditions stimulated lively speculation in London and covering by dealers. The combination drove up spot ribbed smoked sheets from 84 buyers, 85 sellers on July 6 to 105 buyers, 110 sellers on the 11th.

The market of the week ended July 18, opened at 109 buyers, 110 sellers. Prices did not decline under profit-taking in London, but steadily advanced the entire week. On the 18th spot ribs were 116 buyers, 117 sellers.

The week of July 25, the market was strong and weak alternately. Spot ribs on July 20 were 121 buyers, 122 sellers, the highest level for the week or for any date since August, 1914. July 21 the price receded 5 cents and recovered the next day to 120 buyers, 121 sellers. These prices steadily declined the balance of the week to 115 buyers, 115½ sellers, on July 25. The decline was due to repeated offerings by London which were not accepted because New York dealers are long to a degree on standard rubber and buyers will not support the market.

Parás were scarce and moving in sympathy with plantation grades. Balatas were firm, scarce, and neglected.

Importations of all grades during May, 1925, were 36,889 tons, compared with 23,914 tons one year ago. Plantation arrivals for May were 34,187 tons, compared with 22,466 tons one year ago. Total importations of plantation rubber for five months ended May 31 were 140,877 tons, compared with 130,501 tons for the corresponding period of 1924. Total importations of all grades of rubber for the five months ended May 31 were 151,450 tons compared with 137,476 tons for the corresponding period of last year.

New York Spot Closing Rubber Prices

Prices in Cents Per Pound

PLANTATIONS	June, 1925								July, 1925														
	22	23	24	25	26	27	29	30	1	2	3	4*	6	7	8	9	10	11	13	14	15	16	17	18
Sheet																								
Ribbed smoked	79¼	83½	85⅜	82⅞	87	89⅜	85⅜	82⅝	81⅛	81⅞	85⅜	....	88⅛	90½	95⅛	94⅞	99⅞	1.06⅛	1.10	1.05⅜	1.10⅜	1.17	1.16¾	1.18⅞
Crêpe																								
First latex	79⅜	81⅛	83⅛	81⅛	84⅜	87½	82⅞	80⅝	79⅜	80½	84½	....	86⅜	89⅛	94	93⅜	98½	1.03⅜	1.08½	1.03	1.08	1.14⅝	1.15¾	1.16⅝
Off latex	74⅝	79	80⅜	79½	82¼	85½	81⅛	78¾	77⅜	78⅞	82½	....	84⅞	87⅜	91½	91⅜	97	.99⅜	1.03½	1.00⅝	1.05½	1.08½	1.11	1.13⅜
No. 2 blanket	72	75¾	77¼	76¾	80¾	83¼	79	76	74½	76	78	....	78¾	83¾	87½	87⅜	87⅛	92¾	99¾	97	1.03	1.07½	1.03½	1.02¼
No. 3 blanket	71	74¼	76	76	78¾	82½	77¾	74½	73½	75	77	....	77¾	82½	86½	86¼	88	90¾	98	95	1.01¼	1.05	99½	1.00¼
No. 4 blanket	69¾	73	75	74½	77½	80¾	76¾	73¼	71¾	73	74½	....	74¾	80	83¾	84	86	88¾	94½	92	99	1.01¾	96¾	96
Thin, clean brown	70¾	75¾	77	76½	79¾	82⅜	78¼	75	73¾	75½	78	....	78½	83¼	86½	87¼	90½	91¾	1.00	96	1.00	1.04½	1.06½	1.05
Specky brown	69½	73¾	75¼	74½	77¼	81	76¼	73¾	72¾	73½	75½	....	76½	81¼	84¾	85	85	88¾	92½	93	99	1.03	1.02½	1.02½
Rolled brown	67½	71¼	72½	70½	73½	76¼	72½	68½	67¾	67½	69½	....	70¼	74¼	78¾	78	80	84	89¼	83	84¾	88¼	88½	86½

*Holiday.

Spot and future quotations on standard plantation and Brazilian grades were as follows:

PLANTATION, July 1. Spot first latex crêpe, 78-79 cents; July, 78-79 cents; Aug., 75¾-76 cents; Sept.-Oct., 73½-74 cents; Oct.-Dec., 67½-68 cents; Jan.-Mar., 63-64 cents.

July 25. Spot first latex crêpe, 1.15 cents; Aug., 1.08-1.09 cents; Aug.-Sept., 1.03-1.04½ cents; Oct.-Dec., 92-94 cents; Jan.-Mar., 85-86 cents.

July 1. Spot ribbed smoked sheets, 81-82 cents; July, 79-80 cents; Aug., 75¾-76 cents; Sept.-Oct., 73½-74 cents; Oct.-Dec., 67½-68 cents; Jan.-Mar., 63-64 cents.

July 25. Spot ribbed smoked sheets, 1.15-1.16 cents; Aug., 1.09-1.10 cents; Aug.-Sept., 1.04-1.05½ cents; Oct.-Dec., 93-95 cents; Jan.-Mar., 85-86 cents.

July 1. Spot No. 2 amber crêpe, 73-73½ cents; July, 72-72½ cents; Aug., 71-72 cents; Aug.-Sept., 70-71 cents; Oct.-Dec., 65-67 cents; Jan.-Mar., 59-60 cents.

July 25. Spot No. 2 amber crêpe, 94-95 cents; Aug., 88-90 cents; Aug.-Sept., 85-87 cents; Oct.-Dec., 83-84 cents; Jan.-Mar., 79-80 cents.

July 1. Spot No. 1 rolled brown crêpe, 63-64 cents; July, 61-62 cents; Aug., 59-60 cents; Aug.-Sept., 57-59 cents; Oct.-Dec., 53-55 cents; Jan.-Mar., 51-52 cents.

July 25. Spot No. 1 rolled brown crêpe, 79-80 cents; Aug., 75-76 cents; Aug.-Sept., 72-73 cents; Oct.-Dec., 70-71 cents; Jan.-Mar., 65-67 cents.

SOUTH AMERICAN PARAS AND CAUCHO. July 1. Spot, upriver fine, 76 cents; islands fine, 70-71 cents; upriver coarse, 60 cents; Cametá, 39 cents; caucho ball, 61¾-62 cents.

July 25. Spot, upriver fine, 1.07-1.08 cents; islands fine, 94-95 cents; upriver coarse, 73-74 cents; Cametá, 51-53 cents; caucho ball, 72-73 cents.

London

The market for the month was one of great scarcity of stocks, extremely active in speculation with prices ascending and virtually no recessions from 38*d* July 1 to 53¼*d* July 20, the highest since August, 1914. Following July 20 there was a decline to 51*d* July 25, when there was less confidence induced supposedly by the determined efforts of American consumers to reduce their crude rubber consumption by increased use of reclaims and of other compounding revisions. The problematical effect on the tire consumer of the repeated advances in prices of tires and tubes was also something of a factor in the outlook. July 24 heavy offerings of futures beyond August were reported.

The weekly reports of London stocks show a marked decline over the records of the previous month. The weekly stocks were as follows: June 29, 5,135 tons; July 6, 4,535 tons; July 13, 4,477 tons; July 20, 4,050 tons; July 27, 4,014 tons.

Singapore

The market for July followed closely the conditions in London and New York. Daily spot sellers' prices advanced from 36½*d* July 1 to 49⅞*d* July 24, the market meantime being on the whole strong and active. On July 3 there was a decline to 34⅞*d* due to poor foreign support. Again on July 9 sales of native rubber and profit-taking caused some decline. Also on the 14th native and Oriental selling weakened the market. There was much speculative selling around 47⅝*d* on the 21st and keen demand of the same sort at 49⅞*d*, July 24. Following that date the market declined with those of London and New York, and on July 27 was 48⅝*d*.

Comparative Low and High New York Spot Rubber Prices

	1925*	July 1924	1923
PLANTATIONS			
First latex crêpe	$0.78 @ $1.22	$0.19¼ @ $0.23½	$0.24⅝ @ $0.28
Smoked sheet, ribbed	.81 @ 1.23	.18⅝ @ .22⅜	.24¼ @ .27¾
PARAS			
Upriver, fine	.76 @ 1.10	.20 @ .22¾	.26¼ @ .26¾
Upriver, coarse	.60 @ .73	.12½ @ .15¼	.22¾ @ .23½
Islands, fine	.70 @ .95	.17¾ @ .20	.24½ @ .25¼
Islands, coarse	.60 @ .72	.11¼ @ .17¾	.....
Cametá	.39 @ .52	.11 @ .13	@.13 @ .13½

*Figured to July 25, 1925.

DURING THE FIRST FIVE MONTHS OF 1925 THE UNITED STATES has exported 669,830 pneumatic casings, value $7,840,688. The May shipment was the largest for the period, 158,302 casings, with value $1,837,845.

"PNEUMATIC TIRES," BY HENRY C. PEARSON. An encyclopedia of tire manufacture, repair, rebuilding, machinery and processes.

New York Quotations

Following are the New York spot rubber quotations, for one year ago, one month ago, and July 25, the current date:

Plantation Hevea	July 25, 1924	June 25, 1925	July 25, 1925
Rubber latex (Hevea) *per gal.*	$1.25 @	$2.85 @	$3.50 @
CREPE			
First latex	.23 @	.78 @ .80	1.15 @ 1.15½
Off latex	.23 @	.77 @ .79	1.14 @
Amber No. 2	.22 @	.70½ @ .72	.94 @ .95
Amber No. 3	.21½ @	.68½ @ .70	@
Amber No. 4	@	@	@
Brown, clean, thin	.21½ @ .21¾	.68½ @ .70	@
Brown, specky	.21¼ @	.66½ @ .68	@
Brown, roll	.20¾ @	.62½ @ .64	.79 @ .80
Sole crêpe	.45 @	.83 @	1.15 @
SHEET			
Ribbed, smoked	.22¼ @ .22⅜	.82 @ .83½	1.15 @ 1.16
East Indian			
PONTIANAK			
Banjermassin	.06⅝ @	.09 @ .10	.09¾ @
Palembang	.07 @	@	@
Pressed block	.11½ @ .12¼	.15 @	.17 @
Sarawak	.06½ @	.09 @	.09¾ @
South American			
PARAS			
Upriver, fine	.22½ @ .22⅝	.70 @	1.07 @ 1.08
Upriver, fine	*.29 @	*.89 @	@
Upriver, medium	.19 @	.62 @	@
Upriver, coarse	.13⅞ @ .14	.55 @	.73 @ .74
Upriver, coarse	*.25 @	*.80 @	@
Islands, fine	.20 @	.60 @ .62	.94 @ .95
Islands, medium	.18 @	@	@
Islands, coarse	.12 @	@	@
Cametá	.13 @	.34 @ .36	.51 @ .53
Acre, Bolivian, fine	.22¼ @	.71 @	@
Acre, Bolivian, fine	* @	*.90 @	@
Beni Bolivian	.22½ @	.71 @	@
Madeira, fine	.22½ @	.72 @	@
Peruvian, fine	.19½ @	.68 @	@
Tapajós, fine	.19 @	.69 @	@
CAUCHO			
Upper caucho ball	.14 @	.57 @	.74 @
Upper caucho ball	*.25 @	*.80 @	@
Lower caucho ball	.13 @	.57 @	.70 @
Maniçobas			
Ceará negro heads	.19 @	†.50 @	.75 @
Ceará scrap	.08 @	†.35 @	.50 @
Maniçobas 30% guaranty	.17 @	†.50 @	.60 @
Mangabeira, thin sheet	.22 @	†.50 @	.55 @
Centrals			
Central scrap	.13¼ @	.50 @ .51	.70 @
Central wet sheet	@	@	@
Corinto scrap	.13¼ @	.50 @ .51	.72 @
Esmeralda sausage	.13¼ @	.50 @ .51	.72 @
Guayule wash'd and dried	.22 @	.52 @	.63 @
Africans			
Black Kasai	†.16 @ .17	@	@
Black Upper Congo	†.16 @ .17	@	@
Red Upper Congo	†.15 @ .16	@	@
Kasai Loanda	@	@	@
Upper Congo Arumini	@	@	@
Masai (Konakry)	@	@	@
Gutta Percha			
Gutta Siak	.16 @ .16¼	.18 @ .18½	.21 @
Gutta Soh	.27 @	.28 @ .29	.30 @
Red Macassar	2.90 @ 3.00	2.75 @ 3.00	3.00 @
Balata			
Block, Ciudad Bolivar	.63 @ .65	.63 @ .65	.63 @ .70
Colombia	.50 @ .54	.52 @ .54	.53 @ .63
Panama	.49 @ .53	.52 @ .54	.53 @ .55
Surinam, sheet	.80 @ .82	.76 @ .78	.77 @
amber	.80 @ .82	.80 @ .85	@
Chicle			
Honduras	‡.58 @ .68	‡.58 @ .68	‡.58 @ .63
Yucatan, fine	‡.58 @ .68	‡.58 @ .68	‡.58 @ .68

*Washed and dried crêpe. Shipment from Brazil.
†Nominal.
‡Duty paid.

Reclaimed Rubber

The rapid advance of crude rubber of all grades and positions has caused pronounced rise in prices for reclaim grades, particularly the higher qualities. Even at the advance recorded, reclaims are still cheap and are priced much below the levels which prevailed at the height of the crude rubber market of 1910.

The present prices for reclaim have been forced by the small dealers in scrap rubber, who refuse to make deliveries on their contracts and are now daily seeking to force prices upward by holding back.

Reclaimers are running their plants to capacity in the effort to meet the needs of their customers. Full capacity is reported as sold out from a month to six weeks in advance. Scrap price conditions are such that reclaimers are unable to figure stable prices for their output hence further advances are probable until scrap becomes stabilized.

The quotations given below are nominal.

New York Quotations

July 25, 1925

Auto Tire				
Black	lb.	$0.12	@	$0.12½
Black, washed	lb.	.14	@	.14¼
Black, selected tires	lb.	.13½	@	.14
Dark gray	lb.	.16	@	.16½
Light gray	lb.	.18	@	.18½
White	lb.	.31	@	.31½
High Tensile Black				
Super-reclaim, No. 1	lb.	.35	@	.36
No. 2	lb.	.22	@	.23
Shoe				
Unwashed	lb.	.12	@	.12½
Washed	lb.	.15	@	.15½
Tube				
No. 1	lb.	.35	@	.37
No. 2	lb.	.24	@	.25
Uncured Tire Friction				
No. 1	lb.	.60	@	.65
No. 2	lb.	.45	@	.50
Miscellaneous				
High grade, red	lb.	.28	@	.28½
Truck tire	lb.	.12	@	.12½
Mechanical blends	lb.	.08	@	.09

British Malaya

Rubber Exports in June

An official cablegram from Singapore to the Malay States Information Agency, 88 Cannon Street, London, E.C.4, England, states that the rubber exported from British Malaya in June totalled 27,894 tons. The amount of rubber imported was 14,706 tons, of which 11,929 tons were declared as wet rubber.

The following are comparative statistics:

	1924		1925	
	Gross Exports Tons	Foreign Imports Tons	Gross Exports Tons	Foreign Imports Tons
January	23,844	8,867	19,183	10,132
February	19,395	7,440	21,622	10,071
March	22,294	8,269	26,836	13,399
April	20,551	7,909	22,414	11,750
May	19,674	7,259	26,667	12,979
June	18,084	7,435	57,894	14,706
Totals	123,842	47,179	144,616	73,037

Distribution

Destination	May, 1925 Tons	June, 1925 Tons
United Kingdom	3,350	3,044
United States of America	19,294	21,605
Europe	2,137	2,157
British Possessions	276	504
Japan	1,584	577
Other foreign countries	26	7
Totals	26,667	27,894

Dealers' Stocks of Rubber

The Malay States Information Agency, 88 Cannon street, London, E. C. 4, England, has received a cablegram stating that dealers stocks of rubber in Singapore on June 30 last amounted to 13,792 tons and in Penang 2,092 tons.

The Market for Rubber Scrap

The rubber scrap market has been very active during the past month. Small dealers appraised their stocks too high and raised prices on all grades too fast owing to active reclaiming demand and the increased price of crude rubber. The result has been that while all grades of rubber still command high prices, the inflated values proposed brought in supplies from a larger territory and in the over-stocked market, prices declined. The steadily enlarging demand, however, will react to stabilize prices on a higher level.

BOOTS AND SHOES. There has been a strong advance in all grades, although as a whole, the demand for shoe-stocks has lagged somewhat.

INNER TUBES. The demand for inner tubes is very strong. The advance in prices on all grades has much more than doubled and in some instances trebled those of a month ago. No. 1 tubes rose from 6½ to 15 cents, an advance of 130 per cent. No. 2 rose from 4½ to 13 cents, an advance of 190 per cent while red and mixed tubes rose to 10½ and 12¾ cents, increases of 150 and 190 per cent respectively.

MIXED TIRES. All tire grades are moving rapidly in large tonnage and at an advance of 40 per cent over last month's quotations. Old tires constitute the chief source of reclaim as to its heaviest tonnage and highest tensile properties. The supply is practically limitless, which is the best assurance that its advances in price will be moderate.

Quotations for Carload Lots

July 25, 1925

Boots and Shoes				
Boots and shoes, black	lb.	$0.03¼	@	$0.04
Red and white	lb.	.02¾	@	0.03⅛
Trimmed arctics, black	lb.	.03	@	.03⅛
Untrimmed arctics	lb.	.02½	@	.02⅝
Tennis shoes and soles	lb.	.01¼	@	—
Hard Rubber				
No. 1 hard rubber	lb.	.12	@	.13
Battery jars, black compound	lb.	.02⅛	@	.03⅛
Inner Tubes				
No. 1, floating	lb.	.15	@	.16
No. 2, compounded	lb.	.13	@	.14
Red	lb.	.10½	@	.11¼
Mixed tubes	lb.	.12¾	@	.13¾
Mechanicals				
Mixed black scrap	lb.	.01¼	@	.01⅜
Heels	lb.	.00⅞	@	.01
Hose, air-brake	ton	33.00	@	36.00
regular	ton	21.00	@	22.00
No. 1 red	lb.	.02¼	@	.02½
No. 2 red	lb.	.02	@	.02⅛
Red packing	lb.	.01⅛	@	—
White, druggists' sundries	lb.	.02⅞	@	.03¼
Mechanical	lb.	.01½	@	.02
Tires				
Pneumatic Standard—				
Mixed auto tires with beads	ton	33.00	@	36.00
Beadless	ton	46.00	@	47.00
White auto tires with beads	ton	42.00	@	45.00
Beadless	ton	52.00	@	57.00
Mixed auto peelings	ton	48.00	@	50.00
Solid—				
Mixed motor truck, clean	ton	50.00	@	52.00

DEVELOPMENT OF ENGLAND'S RUBBER INDUSTRY

The steady development of the rubber trade of England is indicated by the following statistics compiled by the Department of Commerce: exports of rubber manufactured goods, (1913) £3,088,449; (1921) £4,652,663; (1922) £4,998,832; (1923) £5,280,335; and (1924) £6,087,918. Reexports of rubber manufactures are as follows: (1913) £352,710; (1921) £493,708; (1922) £346,700; (1923) £261,484; and (1924) £551,209. Reexports of crude rubber to all countries totaled: (1913) £14,948,342; (1921) £4,066,405; (1922) £4,723,723; (1923) £9,951,102; and (1924) £10,029,991. Of these values the share represented by the United States was: (1922) 504,356 centals, value £2,021,529; (1923) 687,900 centals, value £4,676,843. The figures for 1924 included 86,463,200 pounds, value £5,080,939.

The Market for Chemicals and Compounding Ingredients

New York

THE large and rapid rise in crude rubber prices has stimulated close revision of rubber mixing for the elimination of new rubber as far as possible, by the substitution of various rubber equivalents and reinforcing materials. The demand for the principal compounding ingredients has thus been fully doubled since spring. The changes that have resulted from closer study of compounding represent not only economy in cost but technical advantages in compounding procedure that will be retained in the future by the rubber manufacturer. In some compounding there has been a small advance in price, but in general manufacturers have been satisfied with the general dollar volume increase of business which is afforded by the heavy tonnage increase. Less seasonal decline than usual is noted in all ingredients and pigments.

ACCELERATORS. The use of accelerators is general in all branches of rubber manufacturing and runs to certain distinct types that produce the desired results of acceleration and aging improvement with the least incidental difficulty in processing. Ultra-accelerators are extending in use as knowledge disseminates on how to employ them. Goods cured in hot air heaters formerly requiring long heats at 270 degrees F. are now being cured in half time or less at 240 degrees.

BENZOL. Since the advance announced about 6 weeks ago the demand has continued active. Production is steady although decreased below normal by the temporary shut-down of many coke ovens. Prices are around the same level as last month.

CARBON BLACK. One feature of the month was heavy contract deliveries to rubber manufacturers who are more actively taking standard grades than they were during the spring months. Other features are increased firmness in price at the primary production centers although no advance has been announced.

CLAYS. Clay has gained extended recognition as a valuable compounding ingredient when of the proper quality. Miners and refiners of such special grades are frequently hard pressed to supply the demand which has developed to record proportions within the past six or eight months.

LITHARGE. Readjustment of prices of lead oxides the latter part of June had some unsettling effect on the market. The price changes are attributed more to keener competition than to lower production costs.

SOLVENT NAPHTHA. Consuming demand is reported very active. Stocks are reduced and sold out ahead.

SUBLIMED LEAD. Reduction of ¾-cent a pound was made late in June followed by improvement in sales volume.

WHITING. All grades are at low levels and in routine shipment.

ZINC OXIDE. Heavy buying by the rubber industry followed reduction of ½-cent a pound late in June. This demand has been well sustained during the month and figures as an active market factor.

New York Quotations

July 25, 1925

Accelerators, Inorganic

Lead, carbonate	lb.	$0.10¼	@
Lead, red	lb.	.11½	@
sublimed blue	lb.	.09½	@
sublimed white	lb.	.09½	@
Lime, R. M. (factory)	lb.	.01¼	@
R. M. hydrated	ton	15.00	@
superfine	lb.	.01½	@
Litharge	lb.	.11	@ .12
Magnesia, carbonate	lb.	.07	@ .08½
calcined, light (bbls.)	lb.	.24	@ .45
calcined, ex. light (bbls.)	lb.	.40	@
calcined, md. light (bbls.)	lb.	.15	@
calcined, heavy (bbls.)	lb.	.04	@ .06½
magnesium, carbonate, light	lb.	.07	@ .07¼
Orange mineral A.A.A.	lb.	.13¾	@
Rubber lead No. 4	lb.	.25	@

Accelerators, Organic

A-7	lb.	.68	@ .85
A-19	lb.	.75	@ .90
Aldehyde ammonia	lb.	.93	@
No. 101	lb.	.75	@ .80
Anhydro formaldehyde aniline	lb.	.38	@
Anhydroformaldehyde-para-toluidine	lb.	.89	@
Aniline (factory)	lb.	.17	@ .17½
B. B.	lb.	1.07	@
Benzidine (base)	lb.	.76	@
Benzyl aniline	lb.	.65	@
Cryline	lb.		@
paste	lb.		@
powder	lb.		@
D. P. G. salt	lb.	.84	@
Diethyl amine	lb.	2.00	@
Dimethyl amine	lb.	2.75	@
Dimethylaniline	lb.	.32	@ .34
Di-ortho-tolylguanidine	lb.	1.13	@
Di-ortho-tolylthiourea	lb.	.32	@
Diphenyl guanidine	lb.	.98	@
Ethyl aniline	lb.	1.05	@
Ethylidene aniline	lb.	.65	@
Ethyl-o-toluidine	lb.	.75	@
Excellerex	lb.	.28	@ .32
Formaldehyde aniline	lb.	.42½	@
Hexamethylene tetramine	lb.	.82½	@
No. 102	lb.	.80	@ .85
Lead oleate (fact'y)	lb.	.18	@
Methylene aniline	lb.	.35	@ .42
Methylenedianilide	lb.	.40	@
No. 999	lb.	.17	@
No. 552 Piperidine piperidyl-dithio-carbamate	lb.	4.80	@
Shawinigan paraldehyde	lb.		@
Para-nitrosodimethylaniline	lb	.99	@
Paraphenylene diamine	lb	1.25	@ 1.30
Quinodine	lb.	.40	@
Super sulfur No. 1	lb.	.50	@ .55
No. 2	lb.	.20	@ .30
Tensilac No. 41	lb.	$0.65	@
Thiocarbanilide	lb.	.25	@ .31
Trimene	lb.		@
Trimene base	lb.		@
Triphenylguanidine	lb.	.73	@
Tuads	lb.	5.00	@
Vulcone	lb.	.79	@
Zimate	lb.	5.00	@

Acids

Acetic 28% (bbls.)	100 lb.	3.38	@
glacial (carboys)	lb.	.16	@
Cresylic (97% straw color)	gal.	.58	@ .62
(95% dark)	gal.	.55	@ .60
Sulphuric, 66° (carboys)	lb.	.02	@

Alkalies

Caustic soda	100 lbs.	3.10	@
flake, 76% (factory)	100 lbs.	3.60	@ 4.31
solid, 76% (factory)	100 lbs.	3.20	@ 3.91

Colors

BLACK

Bone	lb.	.08	@ .10
Carbon:			
A. & W. nonfli	lb.	.40	@
Aerfloted arrow	lb.	.07½	@ .12
Compressed	lb.	.07	@ .11½
Uncompressed	lb.	.07	@ .11
Micronex	lb.	.08	@ .12
Drop	lb.	.07½	@ .10
Lamphlack	lb.	.12	@ .14
Shawinigan	lb.		@
Thermatomic carbon	lb.	.04	@

BLUE

Cobalt	lb.		@
A. & W. blue	lb.	2.00	@ 4.00
Prussian	lb.	.34	@ .35
Ultramarine	lb.	.08	@ .35

BROWN

Iron oxide	lb.	.04	@ .04½
Sienna, Italian	lb.	.05½	@ .06½
Umber, Turkey	lb.	.04	@ .06

GREEN

Chrome, light	lb.	.28	@ .29
medium	lb.	.30	@ .31
dark	lb.	.32	@ .34
commercial	lb.	.10	@ .10½
A. & W. green	lb.	2.00	@ 3.00
Oxide of chromium	lb.	.33	@
T. K.	lb.	.40	@

RED

Antimony, Sulphuret golden	lb.	$0.16	@
golden T. K.	lb.	.18	@ .20
golden R.M.P. No. 7	lb.	.20	@
golden pentasulphide, T. K.	lb.	.25	@ .35
golden, 15/17% G. E.	lb.	.23	@ .25
Antimony, Sulphuret crimson	lb.	.27	@
crimson T. K., 15/17%	lb.	.40	@ .42
crimson T. K., S/F.	lb.	.48	@ .50
crimson, 15/17% G. E.	lb	.50	@ .52
crimson, R.M.P. No. 3.	lb.	.50	@
7-A	lb	.35	@
Z-2	lb.	.20	@
Antimony			
Arsenic, red-sulphide	lb.		@
A. & W. red (4 shades)	lb.	1.50	@ 3.00
purple	lb.	2.00	@ 3.00
Sulphuret Vermilion	lb.	.50	@
Iron oxides			
domestic	lb.	.11	@ .12
English	lb.	.11½	@
English Indian	lb.	.09	@ .11
Indian, pure	lb.	.06	@ .12
pure bright	lb.	.11	@ .14
reduced	lb.	.07½	@ .11
Spanish	lb.	.02¾	@ .04½
Levigated, waterfloated	lb.	.02½	@
Venetian	lb.	.02½	@ .05¼
Maroon Indian	lb.	.08	@ .11
Oximony	lb.		@
Pará toner	lb.	.90	@ 1.00
Toluidine toner	lb.	1.95	@ 2.10
Vermilion, English quick-silver	lb.	1.45	@ 1.55

WHITE

Akcolith	lb.		@
Albalith	lb.	.05¾	@ .06¼
Aluminum bronze	lb.	.55	@ 1.20
Lithopone	lb.	.06	@ .07
Sterling	lb.	.05¾	@ .06¼
Azolith	lb.	.05⅝	@ .06⅛
Imported prime	lb.	.07	@ .07¼
T. O. pigment	ton	8.50	@15.00
Zinc oxide			
AAA (lead free)	lb.	.07½	@ .07¾
Azo (factory):			
ZZZ (lead free)	lb.	.07¼	@ .07¾
ZZ (5% leaded)	lb.	.06⅞	@ .07⅛
Z (8.10% leaded)	lb.	.06⅞	@ .07¾
French process, Florence brand			
Green seal	lb.	.10¾	@ .11¼
Red seal	lb.	.09¾	@ .10¼
U. S. P.	lb.	.14½	@ .16½
White seal	lb.	.11⅞	@ .12¼
Horse Head brands			
Selected	lb.	.08	@ .08¼
Special	lb.	.08	@ .08¼
XX red	lb.	.07½	@ .07¾

White—*Continued*

Leaded brands			
Lehigh	lb.	$0.07⅛ @	.07¾
Standard	lb.	.07⅛ @	.07¾
Sterling	lb.	.07⅛ @	.07¾
Superior	lb.	.07⅛ @	.07¾
Palmerton process			
Kadox, black	lb.	.10⅜ @	.11⅛
blue	lb.	.09⅜ @	.10⅛
red	lb.	.08⅞ @	.09⅛
Snow white	lb.	@	
YELLOW			
Arsenic	lb.	.70 @	.75
Chrome	lb.	.17½ @	.18½
A. & W. yellow	lb.	2.50 @	4.00
Ochre, domestic	lb.	.01½ @	.02
imported	lb.	.03 @	.03½

Compounding Ingredients

Aluminum flake (sacks C.L.)	ton	21.85 @	
(sacks L. C. L.)	ton	24.50 @	
Ammonia carbonate	lb.	.13½ @	.15
Are-o-sole	ton	10.00 @	14.00
Asbestine	ton	14.00 @	18.00
Aluminum silicate	ton	25.00 @	27.00
Barium, carbonate (bbl.)	ton	54.00 @	56.00
dust	lb.	.05 @	.06
Barytes, imported white	ton	28.00 @	34.00
water ground and floated	ton	23.00 @	26.00
Basofor	lb.	@	
Blanc fixe, dry	ton	77.00 @	
pulp	ton	64.00 @	
Carrara filler (factory)	lb.	.02 @	
Chalk, precip. extra light	lb.	.04¼ @	.05
heavy (f.o.b. factory)	lb.	.03¼ @	.04
Clay, Dixie	ton	20.00 @	35.00
Blue ribbon (C. L. fcty.)	ton	14.00 @	
Blue Ridge, dark	ton	9.00 @	
light	ton	12.00 @	
Catalpo (facty.)	ton	35.00 @	
China	lb.	.01¾ @	
Langford	ton	12.00 @	
Cotton flock, black	lb.	.12 @	.12½
light-colored	lb.	.13 @	.13½
white	lb.	.16 @	.21
Cotton linters clean mill run	lb.	.06½ @	
Glue, high grade	lb.	.21 @	.29
medium	lb.	.18 @	.24
low grade	lb.	.14 @	.17
Graphite, flake	lb.	.06½ @	.12
Lime	ton	35.00 @	40.00
Mica, amber	lb.	.05 @	
Pumice stone, powd.	lb.	.03 @	.05
Rotten stone (bbls.)	lb.	.02½ @	.04½
Soap bark, cut	lb.	.09 @	.09½
Soapstone	ton	15.00 @	22.00
Sodium bicarbonate (bbls.)	100 lbs.	2.00 @	
Starch, powd. corn			
Buffalo (bbls.)	100 lbs.	4.14 @	4.24
(bags)	100 lbs.	3.87 @	3.97
Talc, soapstone	ton	15.00 @	22.00
Terra blanche	ton	25.00 @	28.00
Whiting, domestic No 33	ton	10.00 @	
chalk, L. H. B.	ton	16.00 @	25.00
commercial (facty.)	100 lbs.	1.00 @	1.15
English, imported	lb.	.01¼ @	
English, cliffstone (factory)			
gilders (bolted)	100 lbs.	1.25 @	1.35
Paris White	100 lbs.	1.25 @	1.50
Nelco	ton	12.00 @	22.50

Chemical Market—*Continued*

New York Quotations

July 25, 1925

Whiting

Perfection	ton	$13.00 @	
Quaker	ton	13.00 @	15.00
Snow-white, E. L. B.	ton	14.00 @	15.00
Sussex	ton	8.00 @	10.00
Witco (C.L.)	ton	12.00 @	
Wood pulp, XXX (facty.)	ton	35.00 @	
X (facty.)	ton	25.00 @	

Mineral Rubber

Genasco (facty.)	ton	50.00 @	52.00
Gilsonite	ton	25.50 @	46.00
Granulated M. R.	ton	35.00 @	45.00
Hydrocarbon, hard	ton	29.00 @	35.00
Hydrocarbon, soft	ton	29.00 @	35.00
Mineral Flour	ton	@	
Ohmlac Kapak, K-R	ton	@	
K-4	ton	@	
320/340 m. p. hydrocarbon	ton	47.00 @	52.00
300/310 m. p. hydrocarbon	ton	42.00 @	47.00
Pioneer, M. R., solid (fac.)	ton	42.00 @	44.00
M. R. granular	ton	52.00 @	54.00
Robertson, M. R., solid (facty.)	ton	35.00 @	75.00
M. R. (gran. facty.)	ton	42.00 @	80.00
Paradura	ton	65.00 @	75.00
Rubrax (facty.)	ton	@	

Resins and Pitches

Tar, pine, retort	bbl	14.50 @	15.50
kiln	bbl.	14.50 @	15.00
Pitch, Burgundy	lb.	.06 @	
coal tar	lb.	.01¾ @	
Fluxol hardwood	lb	.02 @	.04
pine tar	lb.	.03 @	
ponto	bbl.	6.50 @	
Rosin, K (bbl.)	280 lbs.	10.20 @	11.30
strained (bbl.)	280 lbs.	11.10 @	
Shellac, fine orange	lb.	.53 @	.55
Peanut, crude	lb.	.09¾ @	
refined	lb.	.15 @	
Petrolatum, standard	lb.	.06 @	.08
Petrolatum, sticky	lb.	.08 @	.10
Pine, steam distilled	gal.	.63 @	.68
Rapeseed, refined	gal.	.98 @	
blown	gal.	1.05 @	
Rosin	gal.	.58 @	
Soya bean	lb.	.13¼ @	.13½
Tar	gal.	.29 @	.32
Woburn	lb.	@	

Oils (Softeners)

Avoilas compound	lb.	.13 @	
Castor, No. 1, U. S. P.	lb.	.16½ @	
No. 3, U. S. P.	lb.	.16 @	
Corn, crude (bbls.)	lb.	.12 @	
Cotton, Summer yellow	lb.	.12 @	
Cycline	gal	.25 @	.32
Glycerine	lb.	.19 @	.19½
Linseed, raw	gal.	.98 @	

Oils (Softeners)

Liquid rubber	lb.	$0.11 @	
Moldrite	lb.	.05 @	.06
Palm lagos	lb.	.09 @	
Palm, niger	lb.	.08¾ @	
Parra M. R. flux	lb.	.06 @	.07

Solvents

Acetone (98.99% [6.62 lbs. gal.])	gal.	1.50 @	1.55
Benzol (90%, 7.21 lbs. gal.) pure	gal.	.24 @	.29
Carbon bisulphide (10.81 lbs. gal.) 99.9% pure (drums)	lb.	.06½ @	.07½
tetrachloride (13.28 lbs. gal.) 99.7% pure (drums)	lb.	.07¼ @	.08
Gasoline No. 303			
Tankcars	gal.	.23 @	
Drums, C. L.	gal.	.26 @	
Drums, L. C. L.	gal.	.29 @	
Motor gas (steel bbls.)	gal.	.22 @	
Naphtha, V. M. & P.	gal.	.21½ @	
68° Bé., 122°, 324°	gal.	.20 @	
76° Bé., 114°, 314°	gal.	.21 @	
71° Bé., 112°, 304°	gal.	.22 @	
Turpentine, spirits	gal.	.98 @	
wood, steam distilled	gal.	.86 @	

Substitutes

Black	lb.	.08½ @	.15
Brown	lb.	.10 @	.15
White	lb.	.10 @	.16½
Brown factice	lb.	.09 @	.16
White factice	lb.	.09½ @	.17

Vulcanizing Ingredients

Sulphur chloride (drums)	lb	@	
Sulphur, soft rubber, 100% pure (C.L.)	100 lbs.	2.35 @	2.60
(L.C.L.)	100 lbs.	2.65 @	2.90
Sulphur, Brooklyn brands			
Refined velvet (bbls.)	100 lbs.	2.60 @	3.15
(bags)	100 lbs.	2.35 @	2.90
Superfine flour (bbls.)	100 lbs.	2.35 @	2.90
(bags)	100 lbs.	1.95 @	2.50
Sulphur rubber makers,	100 lbs.	3.75 @	

(See also Colors—Antimony)

Waxes

Wax, beeswax, white, com.	lb.	.55 @	.65
ceresine, white	lb.	.10 @	.11
carnauba	lb.	.38 @	.40
montan	lb.	.06 @	.06½
ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Paraffin			
122/124 white crude scale	lb.	.06 @	
124/126 white crude scale	lb.	.06⅛ @	
120/122 fully refined	lb.	.06⅜ @	
125/127 fully refined	lb.	.06½ @	

MONEX

The accelerator Monex is known as an ultra-accelerator. Chemically it is tetramethyl thiuram monosulphide. It was developed to secure improved handling qualities and factory use has proved its safety and ease of handling. It is a stable, pale yellow powder melting at 212 degrees F., and disperses perfectly during the mixing operation. Monex is suitable for mold, steam and air vulcanization. Zinc oxide is desirable in stocks containing Monex. This accelerator is well adapted for use in tires, rubber tiling, heels, bright colored specialties and air curing goods.

SEVENTH INTERNATIONAL RUBBER EXHIBITION

Following a cordial request from France, those directing the Seventh Annual Rubber Exhibition have selected the Grand Palais, in Paris, as a suitable building for the coming display, the Exhibition to be held some time during the year 1927. It will take place under the patronage of M. Doumergue, President of the Republic, and under the auspices of the Ministry of the Colonies and the Ministry of Commerce and Industry; with M. Painlévé, the Prime Minister, as President d'Honneur of the Congress. It is confidently expected that the Exhibition will prove as successful as those formerly held in London, New York, and Brussels.

RUBBER DIVISION OF A. C. S.

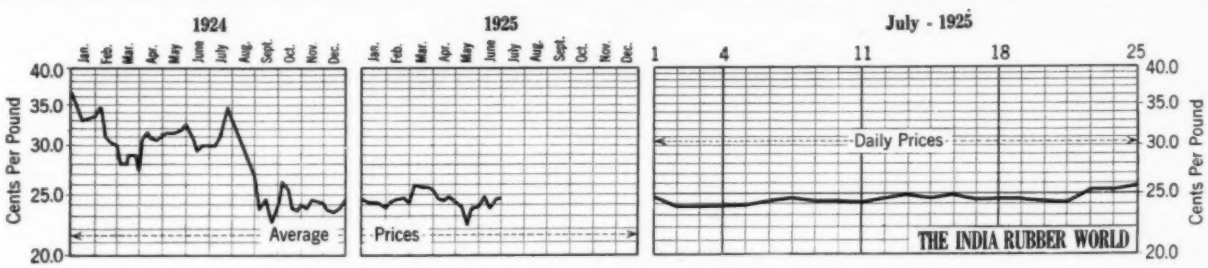
Official announcement has been made that the Rubber Division of the American Chemical Society will not meet in August at Los Angeles with the general meeting of the Society. This decision was made because the results of the poll of the members indicated that too few planned to attend to make a meeting worth while.

ARE-O-SOL

Are-o-sol is a new rubber compounding filler made from oil impregnated shale. The finished ground material is air floated and 98 per cent will pass through 300 mesh screen. It is non-flocculating, of 2.28 gravity, disperses readily and evenly through the rubber without excessive milling and exhibits exceptional abrasive quality.

TIRE REPAIRED WITH SUN'S HEAT

A press dispatch states that the heat was so extreme on July 15 in Ogalalla, Nebraska, that a repair man actually vulcanized a patch on a blown out casing with no other heat than that of the sun outside his shop. Temperature, 117 degrees F.; time, 15 minutes.



Ratio Graph of New York Daily Prices of Spot Middling Upland Cotton

The Market for Cotton and Other Fabrics

New York

AMERICAN COTTON. Spot middlings ranged from 24.70 cents, July 1, to 25.75 July 25. The average for the first two weeks was 24.20 cents and for the second two weeks 24.60 cents. The advance of spot prices was due to continuance of unfavorable reports of crop conditions based on the prevailing drouth in Southern and Central Texas; the heavier infestation of the boll weevil in the East, and the recognition of these conditions by the Department of Agriculture. The government's June crop report showed an acreage under cultivation of 46,448,000 acres, condition of the crop 75.9 indicating 14,339,000 bales on new pars, or revised yields per acre. This crop prospect was a matter of much concern by the trade and very little forward business was done.

The government's report of July 24 indicated the crop on July 16 to be 13,588,000 bales or 751,000 bales less than the end of June indication. This report so surprised the trade that values rose 150 points. Last year's crop totaled 13,627,000 bales.

EGYPTIAN COTTON. Although the steadily increasing curtailment of production is more radical by mills using short cottons than by those using extra staple and other premium cottons, it has tended to restrict spot demand for the latter.

The Egyptian crop continues to progress favorably and the new crop options are too strong to stimulate buying. The exact situation on new crop cotton is difficult to define in the absence of transactions.

On July 1, Egyptian cotton c.i.f. Boston Medium Sakellaridis was quoted at 64 to 66 cents; Medium Uppers at 34½ to 36 cents. On July 27, the quotations were, Medium Sakellaridis, new crop, 53⅜ cents; Medium Uppers, new crop, 37⅜ cents.

Cotton Fabrics

DUCKS, DRILLS AND OSNABURGS. The increased activity of the market cited a month ago has been maintained and the volume continues to total larger for nearby and future contract shipments. The market tone is steadily improving. Many classes of fabrics coming under the head of specialties are in limited supply for spots, and cotton goods manufacturing interests are holding firmly for better net price returns. A strong market with good demand is expected. Several large contracts for hose and belting ducks have been placed recently.

RAINCOAT FABRICS. The raincoat trade is very busy on light color rubber surface fabrics for which the demand exceeds the supply at the present time. The only drawback is the high price of rubber which causes daily changes in prices.

SHEETINGS. While the price of cotton has been declining, prices of cloths have been holding fairly firm. A fair demand exists for goods for spot delivery. Many mills are curtailing their production.

TIRE FABRICS. During the second week of July 8,000,000 pounds of fabrics were bought by tire manufacturing companies. The week ending the 25th 1,000,000 pounds of carded peeler and Egyptian upper qualities were bought for tires. In general, however, the market was quiet. There was some covering on miscellaneous light weights and ducks for August-December delivery. Prices still remain below levels at which they should be for present prices of cotton. Apparently mills are hedging sales and expect to cover cotton later at lower prices. Buying of major fabrics is not general because of uncertainty of tire production schedules for the last quarter of the year.

New York Quotations

July 25, 1925

Drills

38-inch 2.00-yard	yard	$0.20¾ @
40-inch 3.47-yard		.12¾ @
52-inch 1.90-yard		.22⅜ @
60-inch 1.52-yard		.27⅞ @

Duck

38-inch 2.00-yard	yard	.22 @
40-inch 1.47-yard		.29½ @
72-inch 16.66-ounce		.50 @
72-inch 17.21-ounce		.52½ @
MECHANICAL		
Hose and belting	pound	.41 @
Specials		.45 @
TENNIS		
52-inch 1.35 yard	yard	.34 @

Hollands

DEAD FINISH		
Standard, 37-inch	yard	.19½ @
42-inch		.23½ @
RED SEAL		
36-inch		.18 @
40-inch		.19 @
50-inch		.30 @
FLAT FINISH		
Imperial, 36-inch		.15½ @
40-inch		.17½ @

Osnaburgs

40-inch 2.35-yard	yard	.18⅛ @
40-inch 2.48-yard		.17⅜ @
40-inch 3.00-yard		.14⅜ @
37-inch 2.42-yard		.17¼ @

Raincoat Fabrics

COTTON		
Bombazine 64 x 60	yard	.13½ @
Bombazine 60 x 48		.12½ @
Plaids 60 x 48		.13 @
Plaids 56 x 44		.12½ @
Surface prints 60 x 48		.12½ @
Surface prints 64 x 60		.13½ @

Sheetings, 40-inch

40 x 48, 2.50-yard	yard	.15¼ @
48 x 48, 2.85-yard		.13 @
64 x 68, 3.15-yard		.13¾ @
56 x 60, 3.60-yard		.11 @
48 x 44, 3.75-yard		.10¼ @

Sheetings, 36-inch

48 x 48, 5.00-yard	yard	$0.08¼ @
40 x 40, 6.15-yard		.07 @

Tire Fabrics

SQUARE WOVEN 17¼-ounce		
Egyptian, karded	pound	.58 @ .60
Peeler, karded		.47 @ .50
CORD 23/5/3		
Egyptian, combed	pound	.73½ @
Egyptian, karded		.62 @ .67
Peeler, combed, 1 1/16-in.		.77 @ .83
Peeler, karded, 1 1/16-in.		.50 @ .52
CORD 13/3/3		
Peeler, karded	pound	.47 @ .50
LENO BREAKER		
8-oz. Peeler, karded	pound	.48 @ .50
10-oz. Peeler, karded		.48 @ .50
CHAFER		
8.25-oz. Peeler, karded	pound	.56 @
9.5-oz. Peeler, karded		.56 @
12-oz. Peeler, karded		.53 @
14-oz. Peeler, karded		.48 @ .50

GOLD SEAL

40-inch		$0.29 @

The Cotton Outlook

Cotton and Rubber

UNDER the caption above the *Journal of Commerce*, New York, has recently drawn attention editorially to the strange analogy that now exists between cotton and rubber. British restriction of crude rubber production was disapproved in America, it asserts, almost on the day when American manufacturers began "cooperating" to restrict the production of cotton goods. The British answer to our complaints about rubber happens to be substantially the same as the defense of our cotton restrictionists. In both cases rising prices caused overproduction and threatened industrial collapse.

It was enacted by the British Colonial authorities that rubber exports should be proportioned to the market, the quantities to be exported rising with the price. Restriction kept in use the overplantings which would have been abandoned if the price had not gone up. London blames our over-consumption rather than British restriction for the runaway rise in rubber. The restrictive act seems merely an incident in an abnormal post-war condition.

Our cotton manufacturers do not regard themselves as conspirators in restraint of trade. They have bought cotton so freely that they have raised the price above that at which they can sell goods profitably. The trade is restricting production except on orders. Self-regulation of business has no fears of the Trade Commission when it acts to stop losses and not to make undue profits.

California Acala Cotton Experiment

California has apparently taken a long step toward its goal of growing the best American cotton. Enactment by the California Legislature of a law prohibiting the growing in certain districts of other than Acala cotton is looked upon by officials of the United States Department of Agriculture as a progressive move toward the maintenance in cotton growing sections of single varieties of high grade.

The California law can be changed as to variety and districts in the event that another and better variety is found as a result of future experiments. Similar legislation in other states would be of great value to the producers of cotton as well as to the mills, it is believed. California, however, has made the first legislative and perhaps the most promising movement toward getting away from the former tendency on the part of farmers to desert the varieties of cotton which produce lint of high quality in favor of "half and half" and kindred varieties which give a heavy yield of inferior staple.

Pure seed of improved varieties offers the only means of replacing the present inferior mixed stocks throughout the country with a better quality of cotton, and the establishment of compulsory one-variety communities, as in California, appears to be the only method of obtaining it. It is believed that such a course would bring a direct gain of at least 10 per cent in quality, as much more in yield and still another 10 per cent from cultural improvements that are more feasible in one-variety communities. Eminent authorities even assert that several prolific bred-up varieties of cotton, such as Acala and Delfos, which have been developed by the Department of Agriculture and state experiment stations, will equal the yield of the short varieties and at the same time, under proper cultural methods, produce a fiber at least an inch in length of staple.

Acala cotton was discovered in 1906 during an expedition conducted by O. F. Cook, of the Department of Agriculture. The original stock was obtained in that year at Acala, in the state of Chiapas, in southern Mexico, as a result of another expedition sent out for this purpose. The preliminary work of acclimatizing and selecting desirable strains from the Acala stock was carried on chiefly in southern Texas during 1907 to 1911, and in the latter year it was planted for the first time on a field basis at Waco, Texas. Since then it has given very satisfactory results in Texas, Oklahoma and western Tennessee.

Crop Condition Continues Impressive

Unless extraordinary factors should arise to injure the American cotton crop during the growing period, there will assuredly be enough cotton to meet normal demands with margin enough to satisfy any probable requirements above normal in the cotton year beginning August 1.

The second crop report of the season, issued by the Crop Reporting Board of the Department of Agriculture on July 2 as of June 25, estimates the condition of the crop at 75.9 per cent of normal, as compared with 76.6 per cent on May 25, and a ten-year average of 74.6 per cent. The acreage planted is estimated at the enormous total of 46,448,000 acres, an increase of 8.9 per cent over the acreage planted on June 25 last year. A yield of 14,339,000 bales is forecasted, the largest of record excepting the remarkable output of 1914 and 1911. Full allowance is made for the damage done by the drought in Texas, but the condition in most other states has shown sufficient gains almost to offset the deterioration there.

Both the acreage and condition figures were a great surprise to the trade, private reports having indicated a total of 43,000,000 to 45,000,000 acres and a condition around 74 per cent. It is still a long uncertain period to the harvest, however, and too early yet to determine what the boll weevil will do in wide areas near the seaboard or whether Texas prospects will be revived by good general rains. Under what were considered favorable conditions prior to the advent of the boll weevil, the ultimate yield might easily exceed the Government forecast, but the increased acreage will go far to offset weevil and drought damage in particular localities, and another large crop seems probable. Certainly the large planted acreage indicates that Southern farmers were satisfied with and took heart from the cotton results of last year.

Big Increase in World's Crop Predicted

The world's production of lint cotton for 1924-25 is still estimated at about 24,700,000 bales of 478 pounds net, compared with 19,590,000 bales in 1923-24, according to the Bureau of Agricultural Economics of the United States Department of Agriculture. Some revisions and some new estimates of production have been received by bureau officials in the last few weeks, but the increases that have occurred in some localities are offset by losses sustained in others, leaving the total practically the same as announced two months ago. Significant changes in detail are the reduced estimates for Egypt, Uganda and the Anglo-Egyptian Sudan, and the increased estimates for the United States and Peru.

Mills Seek Statistics of Merchants' Stocks

Proposals to gather statistics relating to the textile industry, particularly in regard to stocks of goods in merchants' hands, production of mills and orders available, as a basis of mill operations were indorsed by the cotton manufacturers' associations of North and South Carolina in annual convention in Asheville, North Carolina, recently, and also by the board of governors of the American Cotton Manufacturers' Association, which met there simultaneously. No definite method of collecting the necessary information has yet been decided upon, the matter having been left largely in the hands of W. J. Vereen, president of the American association.

REPLETE WITH INFORMATION FOR RUBBER MANUFACTURERS—H. C. Pearson's "Crude Rubber and Compounding Ingredients."

Metal Market Review

New York

In general all of the non-ferrous metals showed considerable strength during July, with prices higher. There was active buying of tin during the early part of the month, substantial sales continuing throughout the last two weeks, while conditions in the copper market were much more encouraging. The steel trade entered the second half of the year on a scale well above that of the summer of 1924, the July production, according to *The Iron Age*, being 50 per cent above that of last year.

ALUMINUM. Prices for this metal continue unchanged, although there was an increased demand during the middle of the month for the shares of the Aluminum Co. of America, following the news that the concern was planning reorganization in preparation for still further developments in Canada.

ANTIMONY. The continued political disturbances in China have had their effect upon this market, although the position is becoming easier because of better arrivals expected late in July and early in August. Production up to the fall is said to have already been contracted for, mostly by European buyers.

COPPER. Since early in June this metal has shown a fairly steady improvement, while its position was much strengthened by the report from the American Bureau of Metal Statistics that there had been a decrease of 62,044,000 pounds in the stocks of refined copper during the three months from April through June. It is predicted that copper will be selling at 15 cents a pound by September 1.

LEAD. The market remained very steady during the first weeks of the month, but during the third week the American Smelting & Refining Co. advanced prices $4 a ton in two days. These advances called attention to the strength of the market.

STEEL. Although compilations prepared by the American Iron and Steel Institute show that the steel ingot production in June fell 7 per cent in daily rate as compared with May, the output for the first half year of 1925 was 22,406,160 tons, as against 19,737,034 tons for the first half of 1924. In only two other six-month periods has the country produced more steel than in the first half of 1925. One of these was in January-June, 1923, when the record output reached 23,327,000 tons, the other being July-December, 1918, when the total figure was 22,531,000 tons.

TIN. Prices throughout the month continued to advance, while during the last few days of the month a new high level was reached when Straits tin sold at 58⅞ cents a pound. The market was called strong abroad and firm here.

ZINC. During the last part of the month zinc made a net advance of $1 a ton, while a better demand was reported.

Basic Metals

July 23, 1925

	Cents per pound	
Aluminum, virgin, 98@99 per cent	27.00	@28.00
Antimony	16.50	@17.00
Copper—Lake, spot	14.375	@
Electrolytic, spot	14.375	@
Castings, refinery	13.875	@
Lead, spot, New York	8.20	@ 8.50
Lead, spot, East St. Louis	8.00	@ 8.30
Nickel, ingot, pound	34.00	@
Tin, spot	58.875	@
Zinc, spot, New York	7.67½	@ 7.70
Zinc, spot, East St. Louis	7.32½	@ 7.35

Steel Wire

BASE PRICE* ON NO. 9 GAGE AND COARSER

	Cents per pound	
Bright basic	4.25	@
Annealed soft	4.50	@
Galvanized annealed	5.15	@
Coppered basic	5.15	@
Tinned soft Bessemer	6.15	@

*Regular extras for lighter gage.

Copper Wire

BASE PRICE F. O. B. FACTORY

	Cents per pound	
Bare copper wire	16.00	@16.50
No. 6 B. & S. gage	16.00	@16.50
No. 8 B. & S. gage	16.00	@16.50
No. 14 B. & S. gage	17.00	@17.50

Plantation Rubber Exports from Dutch East Indies

Java and Madura

To—	February 1924 Kilos	February 1925 Kilos	Two Months Ended February 1924 Kilos	Two Months Ended February 1925 Kilos
Holland	263,000	161,000	469,000	288,000
Great Britain	411,000	425,000	1,091,000	815,000
Germany	53,000	131,000	95,000	247,000
Belgium	.....	13,000	.....	19,000
Italy	25,000	47,000	47,000	119,000
Sweden	.....	.....	.....	3,000
United States	2,186,000	2,364,000	4,059,000	4,495,000
Singapore	139,000	160,000	415,000	268,000
Japan	171,000	.....	308,000	11,000
Australia	27,000	4,000	49,000	7,000
Totals	3,275,000	3,305,000	6,533,000	6,272,000
Ports of Origin:				
Tandjong-Priok	1,373,000	1,362,000	2,506,000	2,580,000
Cheribon	.....	5,000	.....	22,000
Samarang	214,000	327,000	386,000	593,000
Sourabaya	1,390,000	1,380,000	2,901,000	2,629,000
Pasuruan	90,000	90,000	193,000	126,000
Probolinggo	126,000	77,000	222,000	159,000
Panarukan	62,000	85,000	115,000	188,000
Banjuwangi	111,000	104,000	176,000	178,000
Tjilatjap	28,000	116,000	215,000	173,000

Belawan

To—	February 1924 Kilos	February 1925 Kilos	Two Months Ended February 1924 Kilos	Two Months Ended February 1925 Kilos
Holland	114,000	94,000	284,000	244,000
Great Britain	487,000	963,000	786,000	1,644,000
Germany	.....	41,000	.....	111,000
France	6,000	9,000	6,000	21,000
Belgium	.....	.....	5,000	.....
Italy	16,000	19,000	36,000	48,000
United States	2,565,000	1,605,000	5,292,000	3,593,000
Penang	71,000	124,000	177,000	230,000
Singapore	109,000	48,000	196,000	119,000
Hongkong	21,000	.....	20,000	.....
Australia	2,000	3,000	2,000	3,000
Other countries	.....	1,000	1,000	1,000
Totals	3,391,000	2,907,000	6,805,000	6,014,000

Report of Rims Inspected and Approved by The Tire and Rim Association of America, Inc.

Size	June, 1925 Number	June, 1925 Per Cent	First 6 Months 1925 Number	First 6 Months 1925 Per Cent
Clincher Rims				
24 x 3	.....	....	6,779	0.1
26 x 3	6,194	0.3	54,508	0.4
28 x 3	851	0.0	1,590	0.0
30 x 3	19,802	0.9	197,441	1.5
30 x 3½	388,810	18.3	2,719,763	20.1
31 x 4	79,930	3.8	505,170	3.7
Straightside Rims (Pass.)				
27 x 3½	.....	....	1,512	0.0
28 x 3½*	743,829	35.0	4,126,107	30.5
29 x 3½*	1,143	0.1	144,390	1.1
30 x 3½	54,236	2.6	427,487	3.2
32 x 3½	8,822	0.4	14,833	0.1
28 x 4*	199,427	9.3	1,453,708	10.8
29 x 4*	159,231	7.5	741,070	5.3
30 x 4*	14,916	0.7	284,605	2.1
31 x 4	.....	....	1,393	0.0
32 x 4	23,467	1.1	147,621	1.5
33 x 4	1,699	0.1	7,212	0.1
34 x 4	.....	....	300	0.0
29 x 4½*	16,703	0.8	257,867	1.9
30 x 4½*	136,598	6.4	662,558	4.4
31 x 4½*	13,080	0.6	224,794	1.8
32 x 4½	56,717	2.7	365,186	2.7
33 x 4½	490	0.0	490	0.0
34 x 4½	5,861	0.3	68,980	0.5
30 x 5*	43,111	2.1	205,980	1.4
31 x 5*	57,363	2.7	268,246	2.0
33 x 6*	6,742	0.3	17,249	0.1
Truck Rims				
30 x 5	64,459	3.1	419,779	3.1
34 x 5	6,605	0.3	64,970	0.5
32 x 6	6,549	0.3	76,540	0.6
36 x 6	3,320	0.2	32,223	0.2
34 x 7	602	0.0	11,658	0.1
38 x 7	615	0.0	6,185	0.0
36 x 8	901	0.0	7,000	0.1
40 x 8	2,132	0.1	7,799	0.1
44 x 10	95	0.0	654	0.0
Total	2,124,300	100.0	13,533,647	100.0

* Balloon casings.

NOTE.—In June 65.5 per cent of all rims produced were for balloon tires. Of the remaining 34.5 per cent, 23.0 per cent were clinchers, 3 per cent were motorcycle rims and 4.0 per cent were truck rims.

Exports of India Rubber Manufactures from the

EXPORTED TO	Belting Value	Hose Value	Packing Value	Thread Value	Boots Pairs	Boots Value	Shoes Pairs	Shoes Value	Canvas Shoes with Rubber Soles Pairs	Canvas Shoes with Rubber Soles Value	Soles and Heels Value	Waterproofed Auto Cloth and Rubberized Fabrics Value
EUROPE												
Austria	.....	.....	.....	.....	12	$36	120	$176	72	$127	.....	.....
Azores & Madeira Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belgium	$5,721	$931	$132	.....	168	672	.....	.....	336	292	.....	$3,971
Czechoslovakia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Denmark	487	197	.....	.....	364	936	200	500	7,431	5,388	$18,627	1,108
Esthonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Finland	1,969	63	36	.....	.....	.....	.....	.....	.....	.....	165	440
France	8,411	197	1,947	$53,187	4	11	181	605	626	484	.....	10,006
Germany	1,318	93	.....	.....	2,124	7,594	300	900	5,402	5,342	675	1,210
Greece	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	407
Hungary	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iceland & Faroe Islands	.....	.....	.....	.....	2,241	4,759	3,675	3,993	932	478	.....	.....
Italy	46	.....	.....	7,107	376	1,344	.....	.....	480	360	181	799
Latvia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Malta, Gozo, and Cyprus Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Netherlands	.....	2,558	.....	.....	.....	.....	.....	.....	1,454	2,572	77	605
Norway	1,643	1,700	91	.....	1,659	4,745	3,031	2,322	14,952	8,832	2,122	1,096
Poland and Danzig	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portugal	56	.....	.....	.....	.....	.....	.....	.....	778	492	.....	.....
Rumania	.....	.....	16	.....	.....	.....	960	154	.....	.....	.....	.....
Russia in Europe	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spain	357	465	23	1,322	324	1,206	.....	.....	696	477	201	150
Sweden	3,769	892	583	.....	3,654	11,583	.....	.....	11,268	4,187	969	1,737
Switzerland	316	1,013	.....	.....	57	244	.....	.....	.....	.....	76	2,044
Turkey in Europe	.....	.....	.....	.....	.....	.....	.....	.....	72	140	.....	.....
United Kingdom	26,826	36,843	3,181	61,589	9,815	32,950	4,392	2,490	39,414	29,462	2,444	33,589
Irish Free State	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yugoslavia, Albania, etc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
TOTALS, EUROPE	$50,919	$44,952	$6,009	$123,205	20,798	$66,080	12,859	$11,140	83,193	$58,633	$25,537	$57,162
NORTH AMERICA												
Canada	$11,996	$31,030	$6,675	$9,671	701	82,747	142	$123	10,121	$4,898	$1,122	$18,970
British Honduras	30	199	.....	.....	.....	.....	.....	.....	.....	.....	.....	68
Costa Rica	60	816	139	.....	.....	.....	70	55	133	93	1,201	.....
Guatemala	1,421	314	362	.....	.....	.....	96	89	5,606	4,430	2,246	81
Honduras	.....	541	15	.....	.....	.....	110	110	496	765	2,725	158
Nicaragua	299	449	269	.....	34	36	288	378	2,685	2,123	2,008	.....
Panama	.....	640	4,282	.....	.....	.....	.....	.....	2,196	2,201	1,404	572
Salvador	234	881	337	.....	.....	.....	267	180	1,440	826	3,804	.....
Mexico	21,658	28,358	3,342	1,283	120	458	2,685	2,352	19,188	13,961	17,949	5,908
Miquelon and St. Pierre Is.	.....	.....	.....	.....	420	1,442	.....	.....	.....	.....	.....	.....
Newfoundland and Labrador	448	2,846	30	.....	7,634	22,803	2,761	3,930	3,530	2,352	2,878	60
Bermuda	.....	.....	.....	.....	.....	.....	.....	.....	723	681	157	17
Barbados	.....	.....	.....	.....	.....	.....	.....	.....	144	119	49	.....
Jamaica	.....	25	14	.....	.....	.....	.....	.....	3,282	2,629	328	588
Trinidad and Tobago	.....	118	258	.....	200	178	227	155	1,997	1,118	240	284
Other British West Indies	102	86	63	.....	.....	.....	60	44	1,158	969	34	.....
Cuba	9,139	22,287	6,030	50	.....	.....	934	664	105,887	69,591	15,317	5,483
Dominican Republic	155	1,111	18	.....	.....	.....	.....	.....	9,486	5,839	839	.....
Dutch West Indies	25	7,955	179	.....	.....	.....	.....	.....	9,463	6,419	117	477
French West Indies	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haiti	.....	1,033	94	.....	.....	.....	47	92	744	466	60	170
Virgin Islands of U. S.	.....	.....	.....	.....	.....	.....	.....	.....	123	209	99	.....
TOTALS, NORTH AMERICA	$45,567	$98,689	$22,107	$11,004	9,109	$27,664	7,687	$8,172	178,402	$119,689	$52,577	$32,836
SOUTH AMERICA												
Argentina	$7,358	$5,332	$1,403	.....	405	$1,671	.....	.....	6,056	$2,966	$11,203	$14,162
Bolivia	6,875	186	337	.....	72	362	.....	.....	48	39	159	.....
Brazil	21,263	2,789	755	$3,386	66	201	.....	.....	185	213	.....	3,975
Chile	31,326	12,713	1,489	.....	60	177	.....	.....	4,464	2,898	293	2,097
Colombia	408	1,293	1,372	249	.....	.....	224	$152	12,191	8,088	12,255	1,988
Ecuador	21	2,471	314	.....	.....	.....	.....	.....	841	690	704	85
British Guiana	.....	110	.....	.....	.....	.....	.....	.....	.....	.....	116	.....
Dutch Guiana	197	.....	29	.....	.....	.....	.....	.....	96	63	.....	42
Paraguay	278	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Peru	7,151	3,685	270	.....	96	350	60	212	123	124	386	208
Uruguay	796	486	.....	.....	.....	.....	3,120	2,520	124	217	1,968	1,705
Venezuela	345	4,662	523	.....	.....	.....	.....	.....	.....	.....	745	531
TOTALS, SOUTH AMERICA	$76,018	$33,727	$6,492	$3,635	702	$2,761	3,404	$2,884	24,128	$15,298	$27,829	$24,793
ASIA												
British India	$8,295	$845	$625	.....	.....	.....	112	$71	8,400	$8,949	$83	$228
Ceylon	70	42	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,282
Straits Settlements	.....	.....	.....	.....	.....	.....	.....	.....	1,786	1,216	.....	1,134
China	3,173	1,158	716	$320	.....	.....	7,386	6,300	4,320	2,975	.....	5,690
Chosen	1,725	.....	.....	.....	14	$52	240	218	.....	.....	.....	.....
Java and Madura	2,856	2,347	1,254	.....	.....	.....	.....	.....	1,341	1,128	172	5,589
Other Dutch East Indies	384	2,088	122	.....	.....	.....	.....	.....	192	115	.....	919
French Indo-China	.....	.....	221	.....	.....	.....	.....	.....	72	68	.....	.....
Hejaz, Arabia, etc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hongkong	565	1,505	1,405	.....	.....	.....	.....	.....	48	86	98	.....
Japan	2,262	7,988	3,469	1,587	168	480	1,644	1,485	.....	.....	80	.....
Kwangtung, leased territory	183	.....	.....	.....	.....	.....	144	94	.....	.....	.....	.....
Palestine and Syria	278	48	.....	.....	.....	.....	.....	.....	135	125	.....	.....
Philippine Islands	1,714	3,333	931	.....	1,452	1,530	.....	.....	37,826	31,828	5,518	2,334
Turkey in Asia	.....	.....	.....	.....	.....	.....	.....	.....	48	39	.....	.....
Siam	1,416	480	1,755	.....	.....	.....	.....	.....	550	357	.....	.....
TOTALS, ASIA	$23,421	$19,834	$10,498	$1,907	1,634	$2,062	9,526	$8,168	54,718	$46,886	$5,951	$17,176
OCEANIA												
Australia	$6,334	$3,832	$3,048	.....	324	$889	998	$504	2,979	$3,659	$517	$12,476
British Oceania	.....	.....	.....	.....	.....	.....	.....	.....	187	175	.....	.....
French Oceania	91	120	.....	.....	.....	.....	24	24	4,409	3,160	137	18
New Zealand	.....	806	267	.....	160	609	.....	.....	.....	.....	.....	1,854
Other Oceania	.....	.....	.....	.....	.....	.....	.....	.....	438	514	.....	.....
TOTALS, OCEANIA	$6,425	$4,758	$3,315	.....	484	$1,498	1,022	$528	8,013	$7,508	$654	$14,348

United States by Countries During May, 1925

Country	Waterproofed Outer Garments Value	Pneumatic Casings: Automobile Number	Pneumatic Casings: Automobile Value	Pneumatic Casings: Others Value	Pneumatic Tubes: Automobile Value	Pneumatic Tubes: Others Value	Solid Tires: Automobile and Motor Truck Number	Solid Tires: Automobile and Motor Truck Value	Solid Tires: Others Value	Tire Rubber Accessories, Repair Materials Value	Hard Rubber Goods: Electrical Supplies Value	Hard Rubber Goods: Others Value	Rubber Water Bottles and Fountain Syringes Value	Other Druggists' Rubber Sundries Value	Bathing Caps Value	Rubber Toys, Balls and Balloons Value
.....	.....	20	$431	.....	$44	.....	.....	.....	.....	.....	.....	$1,187	.....	.....	.....	$100
.....	.....	16	98	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1,333	27,783	.....	2,514	.....	2	$66	.....	$843	.....	303	$61	$219	$391	1,532
.....	.....	292	4,227	$515	504	$179	25	756	.....	.....	.....	.....	105	15	18	.....
.....	.....	16,545	142,859	3,852	16,478	494	50	1,538	.....	2,750	.....	.....	.....	613	2,279	2,807
.....	.....	.....	.....	.....	86	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	937	13,549	.....	1,875	.....	.....	.....	.....	639	.....	.....	.....	.....	52	.....
$267	.....	1,056	18,374	334	1,650	65	.....	.....	.....	10,817	$541	6,125	188	1,157	2,552	593
.....	.....	525	10,945	29	1,450	28	.....	.....	.....	3,651	.....	15	64	860	509	11,942
.....	.....	1,324	18,955	.....	2,499	.....	87	2,269	.....	1,628	.....	.....	.....	.....	.....	.....
.....	.....	29	558	.....	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	68	986	.....	543	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	574	6,089	411	594	219	82	2,275	.....	94	4	25	803	947	.....	118
.....	.....	356	4,692	.....	759	.....	10	148	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	324	.....	.....	.....	.....	.....	.....
.....	.....	3,346	58,006	1,213	4,076	403	12	255	.....	.....	.....	517	73	1,608	267	9,018
.....	.....	3,458	46,745	.....	3,334	.....	202	8,822	.....	1,164	144	.....	.....	224	.....	185
.....	.....	169	2,117	.....	452	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	577	8,788	122	2,486	33	28	963	.....	112	.....	.....	.....	164	.....	.....
.....	.....	45	817	.....	132	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	42	1,133	.....	325	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1,810	25,531	.....	1,902	.....	169	6,115	$56	3,309	.....	.....	375	21	67	75
.....	.....	7,760	112,713	1,100	13,291	180	21	941	.....	612	.....	.....	.....	245	.....	1,358
.....	.....	609	14,087	32	2,022	.....	4	283	.....	88	.....	115	.....	1,605	218	366
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	10	13,495	167,986	8,872	15,428	661	2,878	54,877	.....	5,445	1,084	11,528	144	20,812	4,106	58,991
.....	.....	100	462	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	6	110	.....	.....	.....	.....	.....	.....	72	11	.....	.....	.....	.....	.....
	$277	54,492	$688,041	$16,490	$72,488	$2,262	3,570	$79,308	$56	$31,548	$1,784	$19,815	$1,813	$28,490	$10,459	$87,085
	$2,336	1,562	$20,166	$681	$2,998	$195	104	$3,462	$751	$21,107	$23,679	$21,773	$1,552	$10,461	$5,460	$13,303
	.....	26	314	.....	36	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
	467	73	1,421	.....	318	.....	.....	.....	128	28	.....	26	13	27	.....	103
	1,212	225	3,981	.....	783	.....	.....	.....	176	19	.....	.....	.....	37	15	445
	252	181	3,546	15	347	.....	.....	.....	.....	51	.....	8	30	222	4	42
	39	160	2,695	.....	540	.....	.....	.....	.....	.....	.....	37	.....	29	.....	43
	549	910	11,825	280	2,670	150	4	66	329	396	.....	158	49	457	6	11
	436	602	9,621	5	1,373	.....	48	1,402	29	141	.....	.....	.....	.....	.....	194
	9,852	6,902	74,339	1,503	29,288	1,276	191	5,954	953	4,589	253	2,155	613	4,213	79	3,984
	1,649	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	8,715	205	2,794	.....	318	.....	.....	.....	633	15	.....	109	34	113	.....	56
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	59	26	.....
	.....	93	975	.....	120	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	174	2,340	19	198	.....	59	1,318	82	58	.....	74	.....	.....	.....	.....
	.....	74	1,060	.....	285	.....	3	117	.....	56	31	.....	.....	72	57	.....
	22	70	855	.....	90	.....	.....	.....	59	16	.....	.....	.....	.....	3	.....
	33,323	9,304	86,164	1,567	13,377	233	2,065	48,021	956	4,362	310	130	1,606	4,408	391	2,719
	714	1,419	16,439	461	2,268	18	72	2,293	462	593	.....	13	75	386	33	131
	.....	212	2,673	26	324	.....	2	33	.....	85	.....	.....	.....	.....	.....	353
	.....	149	1,632	.....	108	10	18	300	.....	.....	.....	.....	.....	.....	.....	.....
	.....	423	6,577	.....	1,423	.....	10	151	366	205	.....	.....	20	49	.....	.....
	.....	4	25	.....	269	37	.....	.....	.....	7	.....	.....	.....	.....	.....	.....
	$59,466	22,768	$249,442	$4,557	$57,133	$1,919	2,576	$63,117	$4,929	$31,728	$24,275	$24,483	$3,992	$21,033	$6,074	$21,384
	$1,183	17,137	$179,444	$7,141	$21,612	.....	227	$8,880	$2,066	$5,371	$2,097	.....	$4,239	$4,015	$913	$1,362
	.....	9	113	.....	18	.....	18	731	.....	.....	.....	.....	.....	.....	.....	94
	.....	20,605	204,738	.....	19,015	.....	200	4,388	.....	1,840	.....	$37	650	2,758	113	934
	1,137	1,925	35,445	696	1,432	$21	12	512	938	100	59	.....	.....	97	.....	177
	348	1,176	18,469	202	4,637	3	30	1,003	188	544	.....	835	12	801	54	1,520
	.....	147	1,541	.....	251	.....	.....	.....	.....	.....	.....	.....	178	377	.....	16
	.....	4	175	.....	41	.....	6	99	.....	.....	.....	.....	.....	.....	.....	.....
	.....	20	233	.....	117	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	5,302	1,377	21,460	.....	4,749	.....	23	978	.....	348	22	27	.....	271	.....	418
	3,744	1,748	19,444	.....	1,785	.....	48	1,693	44	3,985	187	.....	454	503	.....	183
	571	1,971	21,605	45	4,348	.....	6	135	.....	296	.....	.....	1,447	994	.....	539
	$12,485	46,119	$502,667	$8,084	$58,005	$24	570	$18,419	$3,326	$12,484	$2,365	$899	$6,980	$9,816	$1,086	$5,243
	$15	1,259	$14,087	.....	$1,451	.....	215	$5,157	.....	$299	.....	.....	$462	$236	.....	$5,105
	.....	261	3,681	.....	495	.....	14	534	.....	.....	.....	.....	.....	.....	.....	.....
	.....	1,832	15,867	$946	198	.....	196	3,141	.....	6	.....	.....	.....	.....	.....	.....
	172	563	4,716	574	651	.....	94	1,287	$36	128	$297	$7	130	258	$59	300
	.....	81	698	.....	133	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
	.....	1,581	17,854	40	951	.....	162	5,038	5,784	1,502	.....	.....	.....	150	124	.....
	.....	246	2,968	.....	372	.....	.....	.....	.....	96	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	206	1,736	.....	361	.....	.....	.....	.....	32	.....	.....	.....	.....	.....	48
	.....	320	3,121	.....	374	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	450
	379	6,165	56,840	2,685	6,501	$555	288	4,792	.....	201	1,001	1,418	203	2,964	3,217	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	335
	.....	777	10,006	.....	1,964	.....	2	28	.....	214	.....	.....	.....	.....	.....	.....
	7,735	6,577	55,580	711	11,948	397	465	11,176	6,335	1,718	.....	17	805	2,343	.....	20
	.....	8	170	.....	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	28	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	266
	$8,301	19,870	$197,324	$4,956	$25,426	$952	1,426	$31,153	$12,155	$4,196	$1,298	$1,444	$1,600	$5,951	$3,428	$6,524
	.....	7,533	$110,904	.....	$14,654	$261	2,216	$55,626	$986	$7,520	$4,345	$509	.....	$6,746	.....	$4,585
	.....	20	237	.....	47	.....	.....	.....	.....	10	.....	.....	.....	.....	.....	.....
	$229	72	1,189	.....	138	.....	4	109	57	34	.....	.....	.....	.....	.....	18
	.....	4,071	52,014	$164	6,359	.....	629	17,014	90	1,950	313	.....	$20	2,068	$1,150	359
	.....	56	721	12	118	.....	.....	.....	.....	10	.....	.....	.....	.....	.....	.....
	$229	11,752	$165,065	$176	$21,316	$261	2,849	$72,749	$1,133	$9,524	$4,658	$509	$20	$8,814	$1,150	$4,962

Exports of India Rubber Manufactures from the

Africa	Belting Value	Hose Value	Packing Value	Thread Value	Boots Pairs	Boots Value	Shoes Pairs	Shoes Value	Canvas Shoes with Rubber Soles Pairs	Canvas Shoes with Rubber Soles Value	Soles and Heels Value	Waterproofed Auto Cloth and Rubberized Fabrics Value
British West Africa	.....	$31	.....	.....	25	$225	.....	.....	.....	.....	.....	.....
British South Africa	$5,172	13,628	$1,641	.....	1,765	4,790	60	$125	7,546	$4,878	$3,843	$1,123
British East Africa	.....	274	.....	.....	.....	.....	.....	.....	144	288	.....	.....
Canary Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	80	.....
Egypt	706	.....	.....	.....	.....	.....	.....	.....	.....	.....	281	.....
Algeria and Tunis	1,367	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other French Africa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morocco	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portuguese East Africa	14,133	152	519	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spanish Africa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	226
Totals, Africa	$21,372	$14,085	$5,475	.....	1,790	$5,015	60	$125	7,690	$5,166	$4,204	$1,349
Grand Totals	$223,722	$216,045	$50,581	$139,751	34,517	$105,080	34,558	$31,017	356,864	$253,180	$116,752	$147,664

Official India Rubber Statistics for the United States

Imports of Crude and Manufactured Rubber

	May, 1925 Pounds	May, 1925 Value	Eleven Months Ended May, 1925 Pounds	Eleven Months Ended May, 1925 Value
Unmanufactured—*free*				
Crude rubber	82,727,453	$30,311,754	730,560,673	$208,004,942
Balata	20,962	10,938	819,336	422,560
Jelutong or Pontianak	1,035,510	111,119	12,892,564	1,227,981
Gutta percha	347,665	54,751	2,453,506	393,138
Guayule	746,200	132,523	4,534,558	803,563
Rubber scrap	1,532,553	84,707	12,501,359	482,502
Totals	86,410,343	$30,705,792	763,761,996	$211,334,686
Chicle *dutiable*	1,212,816	$640,699	9,763,155	$4,824,548
Manufactured—*dutiable*				
Rubber belting	54,289	$41,641	628,153	444,762
Other rubber manufactures of substitutes for rubber	.....	72,376	.....	1,015,149
Totals	54,289	$114,017	628,153	$1,459,911

Exports of Foreign Merchandise

Unmanufactured				
Crude rubber	2,694,108	$1,323,445	23,984,271	$8,358,116
Balata	5,876	3,411	578,556	378,523
Jelutong or Pontianak	.....	.....	.....	.....
Gutta percha and rubber substitutes and scrap	2,702	550	102,715	8,584
Totals	2,702,686	$1,327,406	24,665,542	$8,745,223
Chicle	.....	.....	148,890	$65,635
Manufactured				
Gutta percha and India rubber	446	$404	140,884	64,146
Totals	446	$404	140,884	$64,146

Exports of Domestic Merchandise

Manufactured				
India rubber				
Reclaimed	809,779	$90,324	5,938,272	$580,819
Scrap and old	3,051,335	127,792	25,651,371	1,054,556
Footwear				
Boots *pairs*	34,517	105,080	788,720	1,854,735
Shoes *pairs*	34,558	31,017	1,516,833	1,242,679
Canvas shoes with rubber soles *pairs*	356,864	253,180	4,044,940	2,902,225
Rubber water bottles and fountain syringes *number*	24,669	15,327	286,448	203,169
Other druggists' rubber sundries	63,133	74,977	694,018	805,333
Bathing caps *dozen*	15,184	23,624	148,861	258,475
Hard rubber goods				
Electric hard rubber goods	157,692	34,449	639,598	235,612
Other hard rubber goods	34,388	47,174	603,274	631,358

	May, 1925 Pounds	May, 1925 Value	Eleven Months Ended May, 1925 Pounds	Eleven Months Ended May, 1925 Value
Tires				
Pneumatic casings				
For automobiles *number*	158,302	$1,837,845	1,317,715	$15,602,642
Others *number*	9,416	34,271	50,161	180,776
Pneumatic tubes				
For automobiles *number*	142,107	239,062	1,157,784	2,039,962
Others *number*	5,798	5,418	47,769	42,342
Solid tires				
For automobiles and motor trucks *number*	11,204	268,898	92,999	2,386,223
Others *number*	103,358	22,243	896,095	216,099
Tire accessories	201,797	92,886	1,629,079	665,456
Belting	395,947	223,722	3,397,043	1,933,906
Hose	557,534	216,045	4,208,041	1,615,926
Packing	111,054	50,581	1,598,395	726,128
Soles and heels	329,527	116,752	2,595,517	848,338
Thread	119,294	139,751	1,234,461	1,439,624
Other rubber manufactures	545,585	244,243	4,538,370	2,472,398
Totals	7,273,042	$4,294,661	63,075,766	$39,938,781

Imports of Crude Rubber and Rubber Latex

	May 1924 Tons	May 1924 Value	May 1925 Tons	May 1925 Value
Imports of Crude Rubber and Rubber Latex in Long Tons and Dollars	27,753½	$14,304,261	36,932	$30,311,754
	Five Months Ended May 1924 Tons	Five Months Ended May 1924 Value	Five Months Ended May 1925 Tons	Five Months Ended May 1925 Value
Imports of Crude Rubber and Rubber Latex for the 5 months ending May 31	139,871	$76,185,237	160,147	$121,417,490

Imports of Crude Rubber Into the United States by Customs Districts

	May, 1924 Pounds	May, 1924 Value	May, 1925 Pounds	May, 1925 Value
Massachusetts	1,114,064	$265,106	3,557,479	$1,261,283
Buffalo	26,036	4,436	168	45
New York	57,124,628	13,153,393	74,543,778	27,518,309
Philadelphia	971,760	216,871	348,284	112,156
Maryland	2,081,530	469,951	1,827,289	604,775
Los Angeles	671,266	152,133	2,223,209	742,333
San Francisco	122,072	28,741	148,846	46,956
Oregon	56,000	13,628	22,400	7,685
Colorado	.....	.....	56,000	18,212
Totals	62,167,356	$14,304,259	82,727,453	$30,311,754

United States Crude and Waste Rubber Imports for 1925 (By Months)

	Plantations	Parás	Africans	Centrals	Guayule	Manicoba and Matto Grosso	Total 1925	Total 1924	Balata	Miscellaneous	Waste
January tons	28,480	989	325	54	112	....	29,960	21,611	22	1,462	206
February	21,740	1,203	120	224	163	6	23,456	31,763	48	908	241
March	31,067	1,906	287	305	346	3	33,914	17,752	25	1,022	186
April	25,403	1,167	332	78	244	7	27,231	42,436	38	987	243
May	34,187	1,834	287	203	364	14	36,889	23,914	30	816	182
June	28,522	990	225	294	299	7	30,337	18,840	33	1,160	143
Totals, 6 months, 1925 tons	169,399	8,089	1,576	1,158	1,528	37	181,787	.....	196	6,355	1,201
Totals, 6 months, 1924	146,811	5,811	1,291	353	548	....	.....	156,316	281	3,452	560

Compiled from statistics supplied by the Rubber Association of America, Inc.

United States by Countries During May, 1925—*(Continued)*

Waterproofed Outer Garments Value	Pneumatic Casings: Automobile Number	Pneumatic Casings: Automobile Value	Pneumatic Casings: Others Value	Pneumatic Tubes: Automobile Value	Pneumatic Tubes: Others Value	Solid Tires: Automobile and Motor Truck Number	Solid Tires: Automobile and Motor Truck Value	Solid Tires: Others Value	Tire Rubber Accessories, Repair Materials Value	Hard Rubber Goods: Electrical Supplies Value	Hard Rubber Goods: Others Value	Rubber Water Bottles and Fountain Syringes Value	Other Druggists' Rubber Sundries Value	Bathing Caps Value	Rubber Toys, Balls and Balloons Value
.....	181	$2,698	$18	$266	.....	.....	.....	.....	$107	.....	.....	.....	.....	.....	.....
$5,438	2,217	21,621	.....	3,371	.....	146	$2,800	$57	2,844	$69	$24	$903	$825	$1,427	$2,001
.....	110	1,329	.....	23	.....	4	116	.....	.....	.....	.....	.....	.....	.....	.....
.....	329	4,552	.....	335	.....	1	29	.....	12	.....	.....	.....	.....	.....	.....
.....	409	3,860	.....	516	.....	52	1,207	357	56	.....	.....	19	48	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	10	72	.....	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	10	235	.....	49	.....	.....	.....	.....	128	.....	.....	.....	.....	.....	35
.....	24	772	.....	91	.....	.....	.....	320	.....	.....	.....	.....	.....	.....	.....
.....	11	167	.....	28	.....	.....	.....	.....	259	.....	.....	.....	.....	.....	.....
$5,438	3,301	$35,306	$18	$4,712	.....	203	$4,152	$734	$3,406	$69	$24	$922	$873	$1,427	$2,036
$86,196	158,302	$1,837,845	$34,271	$239,062	$5,418	11,204	$268,898	$22,243	$92,886	$34,449	$47,174	$15,327	$74,977	$23,624	$127,234

United Kingdom Rubber Statistics

Imports

Unmanufactured	May, 1925 Pounds	May, 1925 Value	Five Months Ended May, 1925 Pounds	Five Months Ended May, 1925 Value
Crude rubber				
From—				
Straits Settlements	4,851,900	£428,898	23,762,200	£1,731,243
Federated Malay States	1,616,400	140,409	9,830,100	701,157
British India	559,100	53,177	5,040,100	357,555
Ceylon and Dependencies	748,100	73,274	7,841,300	551,079
Other Dutch possessions in Indian Seas	289,000	24,381	3,448,000	246,090
Dutch East Indies (except other Dutch possessions indian Seas)	1,120,700	90,656	6,470,300	448,681
Other countries in East Indies and Pacific, not elsewhere specified	149,600	16,584	740,000	62,025
Brazil	540,100	40,756	4,536,100	310,552
Peru	6,700	560	6,700	560
South and Central America (except Brazil and Peru)	49,800	5,360	49,800	5,360
West Africa				
French West Africa	100,700	4,951	969,700	51,421
Gold Coast	11,500	1,000	40,100	2,798
Other parts of West Africa	15,500	861	501,900	31,884
East Africa, including Madagascar	19,100	1,897	276,900	20,267
Other countries	37,700	4,088	235,400	17,988
Totals	10,115,900	£886,852	63,748,600	£4,538,660
Waste and reclaimed rubber	732,200	7,677	2,666,200	28,199
Gutta percha and balata	806,000	100,564	5,103,800	683,999
Rubber substitutes	400	26	26,100	927
Totals	11,654,500	£995,119	71,544,700	£5,251,785
Manufactured				
Boots and shoes....*doz. pairs*	33,048	£55,822	153,104	£326,936
Tires and tubes				
Pneumatic				
Outer covers	.....	260,446	.....	1,236,525
Inner tubes	.....	28,731	.....	151,685
Solid tires	.....	20,810	.....	137,209
Other rubber manufactures	.....	146,583	.....	716,509
Totals	.....	£512,392	.....	£2,568,864

Exports

Unmanufactured				
Waste and reclaimed	1,312,000	£14,253	5,608,900	£65,764
Rubber substitutes	104,000	2,715	497,100	12,203
Totals	1,416,000	£16,968	6,106,000	£77,967
Manufactured				
Boots and shoes....*doz. pairs*	26,369	£40,985	127,792	£194,354
Tires and tubes				
Pneumatic				
Outer covers	.....	257,607	.....	1,179,736
Inner tubes	.....	54,632	.....	248,189
Solid tires	.....	31,984	.....	169,431
Other rubber manufactures	.....	267,537	.....	1,286,927
Totals	.....	£652,745	.....	£3,078,637

Exports—Colonial and Foreign

Unmanufactured	May, 1925 Pounds	May, 1925 Value	Five Months Ended May, 1925 Pounds	Five Months Ended May, 1925 Value
Crude rubber				
To—				
Russia	4,476,700	£386,832	11,084,700	£895,802
Sweden, Norway and Denmark	103,400	8,975	963,900	73,640
Germany	2,649,200	224,400	11,301,400	843,757
Belgium	274,900	23,097	2,300,200	179,521
France	2,571,500	244,820	16,865,800	1,369,192
Spain	96,300	8,765	378,900	30,387
Italy	421,000	37,080	5,906,480	457,893
Austria	3,200	341	107,400	8,843
Hungary	.....	.....	7,600	585
Other European countries	138,400	10,961	1,270,800	93,957
United States	18,155,200	1,659,887	49,566,300	4,053,235
Canada	586,200	67,429	3,355,900	274,318
Other countries	16,100	2,119	472,500	37,067
Totals	29,492,100	£2,674,706	103,581,800	£8,318,197
Waste and reclaimed rubber	69,700	1,941	128,700	3,650
Gutta percha and balata	38,800	4,985	480,200	36,560
Rubber substitutes	.....	.....	55,200	2,659
Totals	29,600,600	£2,681,632	104,245,900	£8,361,066
Manufactured				
Boots and shoes...*doz. pairs*	856	£1,721	2,166	£5,770
Tires and tubes				
Pneumatic				
Outer covers	.....	18,808	.....	121,835
Inner tubes	.....	2,967	.....	16,958
Solid tires	.....	1,495	.....	6,995
Other rubber manufactures	.....	10,330	.....	77,211
Totals	.....	£35,321	.....	£228,769

Landings, Deliveries and Stocks in London and Liverpool as Returned by the Warehouses and Wharves During the Month of May, 1925

	Landed for May Tons	Delivered for May Tons	Stocks, May 30: 1925 Tons	1924 Tons	1923 Tons
London:					
Plantation	3,578	10,651	5,715	51,329	54,035
Other grades	1	2	54	118	101
Liverpool:					
Plantation	†112	†630	†557	†4,270	†5,953
Pará and Peruvian	286	318	185	716	297
Other grades	....	6	23	210	229
Total tons, London and Liverpool	3,977	11,607	6,534	56,643	60,615

†Official returns from the six recognized public warehouses.

AMERICAN EXPORTS OF RUBBER TOYS, BALLS, ETC., CONTINUE TO reach a high figure, the total value for the first five months of 1925 being $589,312, as compared with the estimate for the five months previous of $463,792.

Crude Rubber Arrivals at New York As Reported by Importers

Parás and Caucho

	Fine Cases	Medium Cases	Coarse Cases	Caucho Cases	Cametá Cases
JUNE 19. By "Thespis," South America.					
H. A. Astlett & Co.	267	....	206	2	....
Paul Bertuch & Co.	54	2	....	††245	....
L. Littlejohn & Co., Inc.	183	1	61	163	....
Meyer & Brown, Inc.	189	....	11	....	....
Poel & Kelly, Inc.	64	1	97	561	....
JUNE 21. By "Carmania," Liverpool.					
Meyer & Brown, Inc.	126	....	....	....	....
JUNE 22. By "American Legion," South America.					
Paul Bertuch & Co.	**290	....	....	**86	....
JUNE 27. By "Polycarp," South America.					
H. A. Astlett & Co.	57	4	179	3	....
Paul Bertuch & Co.	236	....	....	130	....
Paul Bertuch & Co.	‡368	....	†69	††247	....
L. Littlejohn & Co., Inc.	17	....	7	650	....
Meyer & Brown, Inc.	....	....	241	258	....
Poel & Kelly, Inc.	193	12	102	693	....
JUNE 27. By "Polycarp," South America.					
Ultramares Corporation	3	....	1	4	....
JUNE 29. By "Franconia," Liverpool.					
Meyer & Brown, Inc.	108	....	....	....	....
JULY 5. By "Caronia," London.					
Meyer & Brown, Inc.	20	....	....	....	....
JULY 7. By "Pancras," South America.					
H. A. Astlett & Co.	54	....	132	22	....
Paul Bertuch & Co.	63	....	136	146	....
L. Littlejohn & Co., Inc.	31	....	45	250	....
Meyer & Brown, Inc.	259	....	....	128	....
Poel & Kelly, Inc.	198	1	98	264	....
JULY 12. By "Arabic," Hamburg.					
Meyer & Brown, Inc.	52	....	110	30	....
Poel & Kelly, Inc.	75	....	....	....	....
JULY 13. By "Lanconia," Liverpool.					
Meyer & Brown, Inc.	94	....	....	....	....
JULY 16. By "Onega," South America.					
Meyer & Brown, Inc.	....	....	....	94	....

‡Pelles. ††Bales. †Skins. **Packages.

Plantations

	Cases
JUNE 18. By "Lucia," Far East.	
Poel & Kelly, Inc.	262
JUNE 18. By "President Harrison," Singapore.	
H. A. Astlett & Co.	858
Baird Rubber & Trading Co., Inc.	150
Paul Bertuch & Co.	282
General Rubber Co.	238
Hood Rubber Co.	*70
J. T. Johnstone & Co., Inc.	109
L. Littlejohn & Co., Inc.	669
H. Muehlstein & Co., Inc.	100
Poel & Kelly, Inc.	700
Chas. T. Wilson Co., Inc.	70
JUNE 18. By "Rhesus," Far East.	
H. A. Astlett & Co.	1,362
H. A. Astlett & Co.	*50
Baird Rubber & Trading Co., Inc.	1672
Paul Bertuch & Co.	200
General Rubber Co.	2,338
Hood Rubber Co.	*184
L. Littlejohn & Co., Inc.	8,408
Meyer & Brown, Inc.	2,803
H. Muehlstein & Co., Inc.	668
H. Muehlstein & Co., Inc.	*584
Poel & Kelly, Inc.	4,689
Vernon Metal & Produce Co., Inc.	640
Chas. T. Wilson Co., Inc.	1,014
JUNE 20. By "Valacia," London.	
Vernon Metal & Produce Co., Inc.	247
JUNE 21. By "Carmania," London.	
General Rubber Co.	568
JUNE 22. By "Bowes Castle," Far East.	
H. A. Astlett & Co.	50
Baird Rubber & Trading Co., Inc.	600
The Fisk Rubber Co.	100
General Rubber Co.	502
Hood Rubber Co.	*350
L. Littlejohn & Co., Inc.	1,373
Meyer & Brown, Inc.	1,509
H. Muehlstein & Co., Inc.	250
Poel & Kelly, Inc.	4,189
Poel & Kelly, Inc.	*1,274
Vernon Metal & Produce Co., Inc.	790
Chas. T. Wilson Co., Inc.	55
JUNE 22. By "City of Bombay," Singapore.	
H. A. Astlett & Co.	2,434
H. A. Astlett & Co.	*159
Baird Rubber & Trading Co., Inc.	989
General Rubber Co.	1,703
Hood Rubber Co.	*212
J. T. Johnstone & Co., Inc.	200
L. Littlejohn & Co., Inc.	4,718
Meyer & Brown, Inc.	2,783
H. Muehlstein & Co., Inc.	121
Poel & Kelly, Inc.	3,598
Poel & Kelly, Inc.	*400
Vernon Metal & Produce Co., Inc.	830
Chas. T. Wilson Co., Inc.	60
JUNE 22. By "Minnekahda," London.	
General Rubber Co.	620
J. T. Johnstone & Co., Inc.	339
L. Littlejohn & Co.	191
JUNE 22. By "Ryufuku Maru," Hamburg.	
Vernon Metal & Produce Co., Inc.	75
Chas. T. Wilson Co., Inc.	192
JUNE 23. By "Beemsterdyke," Holland.	
L. Littlejohn & Co., Inc.	36
JUNE 24. By "Paris," France.	
Poel & Kelly, Inc.	77
JUNE 25. By "Port Denison," London.	
General Rubber Co.	316
L. Littlejohn & Co., Inc.	57
JUNE 25. By "Sandan Hall," Singapore.	
Hood Rubber Co.	*42
L. Littlejohn & Co., Inc.	168
Meyer & Brown, Inc.	336
Chas. T. Wilson Co., Inc.	434
JUNE 26. By "Helenus," Far East.	
H. A. Astlett & Co.	2,015
H. A. Astlett & Co.	*50
Baird Rubber & Trading Co., Inc.	2,405
The Fisk Rubber Co.	192
General Rubber Co.	3,253
Hood Rubber Co.	*350
J. T. Johnstone & Co., Inc.	800
L. Littlejohn & Co., Inc.	5,128
Meyer & Brown, Inc.	3,002
H. Muehlstein & Co., Inc.	615
Poel & Kelly, Inc.	4,915
Poel & Kelly, Inc.	*150
Vernon Metal & Produce Co., Inc.	620
Chas. T. Wilson Co., Inc.	374
JUNE 27. By "Minnetonka," London.	
H. A. Astlett & Co.	58
Baird Rubber & Trading Co., Inc.	1,077
General Rubber Co.	3,548
J. T. Johnstone & Co., Inc.	69
L. Littlejohn & Co., Inc.	1,180
Vernon Metal & Produce Co., Inc.	127
JUNE 27. By "Polycarp," Brazil.	
General Rubber Co.	685
JUNE 29. By "Cleveland," Germany.	
L. Littlejohn & Co., Inc.	144
JUNE 29. By "Franconia," London.	
H. A. Astlett & Co.	207
General Rubber Co.	120
L. Littlejohn & Co., Inc.	179
JUNE 29. By "Maimyo," Far East.	
Baird Rubber & Trading Co., Inc.	386
General Rubber Co.	670
Hood Rubber Co.	*42
L. Littlejohn & Co., Inc.	538
Meyer & Brown, Inc.	2,195
H. Muehlstein & Co., Inc.	978
Poel & Kelly, Inc.	190
Chas. T. Wilson Co., Inc.	420
JUNE 30. By "Gothic Prince," Singapore.	
H. A. Astlett & Co.	1,252
H. A. Astlett & Co.	*324
Baird Rubber & Trading Co., Inc.	1,641
Paul Bertuch & Co.	73
General Rubber Co.	3,875
Hood Rubber Co.	*492
L. Littlejohn & Co., Inc.	5,773
Meyer & Brown, Inc.	2,763
H. Muehlstein & Co., Inc.	445
H. Muehlstein & Co., Inc.	*408
Poel & Kelly, Inc.	*410
Vernon Metal & Produce Co., Inc.	376
Chas. T. Wilson Co., Inc.	1,510
JUNE 30. By "Walton Hall," Singapore.	
Baird Rubber & Trading Co., Inc.	56
General Rubber Co.	716
L. Littlejohn & Co., Inc.	224
Chas. T. Wilson Co., Inc.	52
JULY 1. By "Kosmo," Far East.	
General Rubber Co.	70
L. Littlejohn & Co., Inc.	1,509
JULY 2. By "Blitar," Far East.	
H. A. Astlett & Co.	217
H. A. Astlett & Co.	*128
Baird Rubber & Trading Co., Inc.	152
Baird Rubber & Trading Co., Inc.	*12
Baird Rubber & Trading Co., Inc., Penang Scrap...tons	2½
General Rubber Co.	4,379
Hood Rubber Co.	*201
J. T. Johnstone & Co., Inc.	152
L. Littlejohn & Co., Inc.	3,330
Meyer & Brown, Inc.	684
H. Muehlstein & Co., Inc.	50
Poel & Kelly, Inc.	1,330
Vernon Metal & Produce Co., Inc.	167
Chas. T. Wilson Co., Inc.	204
JULY 2. By "Fuji Maru," Far East.	
Baird Rubber & Trading Co., Inc.	78
General Rubber Co.	1,998
Hood Rubber Co.	10
Hood Rubber Co.	*472
J. T. Johnstone & Co., Inc.	102
L. Littlejohn & Co., Inc.	1,798
Meyer & Brown, Inc.	493
Poel & Kelly, Inc.	1,067
Vernon Metal & Produce Co., Inc.	265
Chas. T. Wilson Co., Inc.	224
JULY 2. By "Haleric," Far East.	
L. Littlejohn & Co., Inc.	623
JULY 2. By "M. S. Dollar," Far East.	
H. A. Astlett & Co.	100
General Rubber Co.	56
Hood Rubber Co.	*260
L. Littlejohn & Co., Inc.	310
Meyer & Brown, Inc.	100
H. Muehlstein & Co., Inc.	100
Poel & Kelly, Inc.	250
JULY 2. By "President Van Buren," Far East.	
H. A. Astlett & Co.	100
Baird Rubber & Trading Co., Inc.	450
Paul Bertuch & Co.	230
The Fisk Rubber Co.	1,328
General Rubber Co.	25
Hood Rubber Co.	*50
L. Littlejohn & Co., Inc.	2,522
Meyer & Brown, Inc.	200
H. Muehlstein & Co., Inc.	441
Poel & Kelly, Inc.	1,116
Chas. T. Wilson Co., Inc.	552
JULY 3. By "Keifuku Maru," Holland.	
Baird Rubber & Trading Co., Inc.	120
JULY 4. By "Maine," London.	
Vernon Metal & Produce Co., Inc.	*89
JULY 3. By "Virgillia," Far East.	
Poel & Kelly, Inc.	175
JULY 5. By "Caronia," England.	
Baird Rubber & Trading Co., Inc.	287
L. Littlejohn & Co., Inc.	80
JULY 5. By "Oak Park," Far East.	
H. A. Astlett & Co.	350
General Rubber Co.	4,460
Hood Rubber Co.	191
Hood Rubber Co.	*386
L. Littlejohn & Co., Inc.	1,029
Meyer & Brown, Inc.	576
H. Muehlstein & Co., Inc.	301
Poel & Kelly, Inc.	379
Vernon Metal & Produce Co., Inc.	123
Chas. T. Wilson Co., Inc.	168
JULY 5. By "West Jester," Far East.	
H. A. Astlett & Co.	300
Poel & Kelly, Inc.	450
JULY 5. By "West Prospect," Far East.	
H. A. Astlett & Co.	450
Poel & Kelly, Inc.	150
JULY 6. By "Karroo," Far East.	
Baird Rubber & Trading Co., Inc.	112
General Rubber Co.	592
L. Littlejohn & Co., Inc.	636
JULY 7. By "Pancras," Brazil.	
General Rubber Co.	313
JULY 8. By "American Trader," London.	
Baird Rubber & Trading Co., Inc.	570
L. Littlejohn & Co., Inc.	1,261
JULY 9. By "France," Havre.	
J. T. Johnstone & Co., Inc.	48
JULY 10. By "Veendam," Amsterdam.	
L. Littlejohn & Co., Inc.	128
H. Muehlstein & Co., Inc.	25
JULY 11. By "Copenhagen," Far East.	
Hood Rubber Co.	*310
Poel & Kelly, Inc.	*300

	Cases
JULY 11. By "Port MacQuarie," London.	
General Rubber Co.	162
J. T. Johnstone & Co., Inc.	924
L. Littlejohn & Co., Inc.	265
H. Muehlstein & Co., Inc.	171
JULY 12. By "Albert Ballin," Hamburg.	
H. Muehlstein & Co., Inc.	48
JULY 12. By "Arabic," Hamburg.	
J. T. Johnstone & Co., Inc.	72
JULY 12. By "Minnewaska," London.	
General Rubber Co.	320
J. T. Johnstone & Co., Inc.	206
L. Littlejohn & Co., Inc.	3,315
Poel & Kelly, Inc.	150
JULY 14. By "Capetown Maru," Germany.	
L. Littlejohn & Co., Inc.	985
Vernon Metal & Produce Co., Inc.	269
JULY 15. By "Caracoli," France.	
L. Littlejohn & Co., Inc.	517
JULY 15. By "Steel Navigator," Singapore.	
Hood Rubber Co.	*277
L. Littlejohn & Co., Inc.	1,199
Meyer & Brown, Inc.	1,478
H. Muehlstein & Co., Inc.	460
JULY 16. By "Copenhagen," Far East.	
L. Littlejohn & Co., Inc.	1,269
Meyer & Brown, Inc.	672
Vernon Metal & Produce Co., Inc.	300
JULY 16. By "Jason," Far East.	
Hood Rubber Co.	*330
L. Littlejohn & Co., Inc.	4,868
Meyer & Brown, Inc.	2,530
Vernon Metal & Produce Co., Inc.	400
JULY 16. By "President Hayes," Far East.	
H. A. Astlett & Co.	450
L. Littlejohn & Co., Inc.	479
Meyer & Brown, Inc.	474

*Arrived at Boston.

Manicobas

	Cases
JUNE 17. By "Sardinian Prince," Brazil.	
Adolph Hirsch & Co., Inc.	75 bales

Rubber Latex

	Lbs.
JUNE 22. By "Bowes Castle," Far East.	
General Rubber Co.	41,813

Africans

	Cases
JUNE 23. By "Ryufuku Maru," Hamburg.	
L. Littlejohn & Co., Inc.	88
Poel & Kelly, Inc.	bales 136
JUNE 26. By "Patria," France.	
L. Littlejohn & Co., Inc.	156
JUNE 27. By "Olen," Bordeaux.	
L. Littlejohn & Co., Inc.	407
Poel & Kelly, Inc.	bales 404
JUNE 29. By "Franconia," England.	
L. Littlejohn & Co., Inc.	20
July 2. By "Blitar," Singapore.	
Hood Rubber Co.	*134
JULY 2. By "Keifuku Maru," Germany.	
L. Littlejohn & Co., Inc.	106
JULY 5. By "Caronia," England.	
L. Littlejohn & Co., Inc.	163
JULY 7. By "Tomaiva," Antwerp.	
Poel & Kelly, Inc.	8
JULY 10. By "Veendyk," Singapore.	
Hood Rubber Co.	*82
July 11. By "Pittsburgh," Antwerp.	
L. Littlejohn & Co., Inc.	117
JULY 13. By "Laconia," England.	
L. Littlejohn & Co., Inc.	10

Balata

	Cases
JUNE 24. By "Mayaro," South America.	
Ultramares Corporation	117
JUNE 30. By "Haiti," South America.	
Middleton & Co., Ltd.	55
JULY 3. By "Calamares," South America.	
Middleton & Co., Ltd.	3
JULY 8. By "Pancras," South America.	
Paul Bertuch & Co.	2
JULY 12. By "Arabic," Hamburg.	
Meyer & Brown, Inc.	197

Guayule

	Cases
JUNE 16. By "Railways," Mexico.	
Continental Rubber Co., of New York	500
JUNE 17. By "Railways," Mexico.	
Continental Rubber Co., of New York	672
JUNE 20. By "Railways," Mexico.	
Continental Rubber Co., of New York	500
JUNE 23. By "Railways," Mexico.	
Continental Rubber Co., of New York	672
JUNE 25. By "Antilla," Mexico.	
Continental Rubber Co., of New York	560
JUNE 26. By "Railways," Mexico.	
Continental Rubber Co., of New York	500
JUNE 30. By "Monterey," Mexico.	
Continental Rubber Co., of New York	1,120
JULY 3. By "Railways," Mexico.	
Continental Rubber Co., of New York	500
JULY 9. By "Railways," Mexico.	
Continental Rubber Co., of New York	500
JULY 14. By "Mexico," Mexico.	
Continental Rubber Co., of New York	1,680

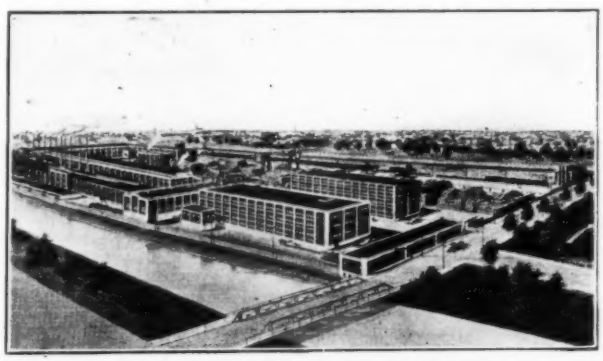
NON-STICKING LINERS

Patents were granted on June 23, 1925 to Abram E. Falor, John B. Dickson and Fred H. Amon of Akron, Ohio, on a non-sticking liner. The patents have been assigned to The B. F. Goodrich Co., Akron, Ohio.

The Cleveland Liner & Manufacturing Co., Cleveland, Ohio, is the sole licensee under this patent for the processing of material known to the trade as Blue Processed Liners. Materials ranging from light sheetings to heavy ducks can be handled in a very satisfactory manner and many rubber companies have found it advantageous to use these processed liners as they show a marked saving.

THE PHILADELPHIA RUBBER WORKS

The article on the manufacture of reclaimed rubber that appeared in THE INDIA RUBBER WORLD, July 1, 1925, was illustrated by pictures of the leading rubber reclaiming plants in the United States.



PHILADELPHIA RUBBER WORKS, AKRON, OHIO

The plant of the Philadelphia Rubber Works, however, was not shown due to the substitution of an unrelated cut. We therefore show herewith the Akron plant of this well known company, with our apologies.

REPLETE WITH INFORMATION FOR RUBBER MANUFACTURERS.—H. C. Pearson's "Crude Rubber and Compounding Ingredients."

TIRE AND TUBE PRICES AGAIN RAISED

Following the continued advance in crude rubber quotations the prices of tires and tubes were, on July 1, raised for the third time this year, all the leading rubber companies participating in bringing about the change. Increases averaging from 10 to 12 per cent on casings and 10 to 15 per cent on tubes were announced by The United States Rubber Co., The Goodyear Tire & Rubber Co., The B. F. Goodrich Rubber Co., The Fisk Tire Co., The Miller Rubber Co., The Ajax Rubber Co., and The Pennsylvania Rubber Co.

The Fisk Tire Co. advanced the price of casings 5 to 12 per cent, while one of the largest single revisions in the history of the industry was by the General Tire & Rubber Co., in raising the price of tubes 33½ per cent. The United States Rubber Co. announced an increase, effective July 3, of 10 per cent in its entire line of casings with the exception of three sizes on which the advance was 5 per cent. Prices of solid tires were raised 10 per cent. It has been said that tire prices today are still from 30 to 40 per cent below 1920 levels, while advancing only about 30 per cent, notwithstanding the fact that crude rubber is now 300 per cent higher than last year.

Still another advance, which represents the fourth of the year, was announced on July 17 by The B. F. Goodrich Co. in advancing prices 10 per cent and 15 per cent, according to the size of the tire. This was followed the next day, according to press reports, by a statement from the United States Rubber Co., that a new price list was being prepared which would show an increase of 10 per cent in the price of all pneumatic automobile casings and 4½ and 5-inch pneumatic tires for trucks; of 15 per cent on other sizes of pneumatic truck casings and all tubes, and of 10 per cent on all solid tires.

The result was a withdrawal of July price lists by the Kelly-Springfield, Goodyear, Fisk and Converse organizations, these companies then raising their prices generally from 10 to 15 per cent. The United States Rubber Co., and the Goodyear and Firestone organizations have also advised their dealers and distributers of the impending changes, which, it is rumored, may be followed later by still another advance. It is claimed that this fourth rise in tire prices since the beginning of May has brought figures from 30 to 45 per cent higher than last year's levels.

INDIA RUBBER WORLD
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Vol. 72 AUGUST 1, 1925 No. 5

TABLE OF CONTENTS

Pages

Editorials
- Simplification the Price of Success ... 645
- The Firestone-Liberia Project ... 646
- To Reduce Rubber Taxation ... 646
- Minor Editorials ... 646

Low Pressure Tires of the Past ... Portrait of R. W. Thompson 647-649

Americans to Grow Rubber in Liberia ... Map 650-652

Guayule—A High Grade Rubber ... 652-653

Inquiries and Trade Opportunities ... 653

Foreign Trade Circulars ... 653

The Water Cure to Date, by R. E. Bacon ... Illustrated 654-655

Customs Appraisers' Decisions ... 655

Sir Thomas Callender to Visit United States ... Portrait 655

May Production, Inventory and Shipments of Tires ... 655

Chemistry
- What the Rubber Chemists are Doing ... 655-659
- Chemical Patents ... 659

American Society for Testing Materials, June Meeting 659

New Machines and Appliances ... Illustrated 660-662
Heavy Hydraulic Molding Press. Electric Safety Coupling and Brake. Removal of Scale from Rubber Molds. Instrument for Determining Rubber Density. Lead Sheath Stripping Machine. Improved System of Grinding Hard Rubber Dust. Alining Pillow Block. Trimmer for Molded Hose. Shurvent Fuse. Arguto Oilless Bearings.

Machinery Patents ... Illustrated 662-663
Apparatus for Grinding Hard Rubber. Rubber Cutting Off Machine. Solid Tire Building Machine. Vulcanizing Insulated Wire, etc. Tire Fabric Stripping Machine. Machine for Making Tire Treads. Machine for Making Weftless Cord Fabric. Making Non-Porous Tubes, etc. Solid Tire Making Machine. Tire Wrapping Machine. Making Articles Direct from Solutions of Rubber. Other Machinery Patents.

Process Patents ... 663

Design Patents ... 663

Editor's Book Table ... 664
"Institution of Rubber Industry Transactions." "Suggestions on the Use of Factice." "United States Government Master Specifications." "Commerce Year Book, 1924." "The Times of Ceylon Green Book, 1925."

New Trade Publications ... 664

Recent Articles Relating to Rubber ... 664-665

Interesting Letters from Our Readers ... 665

New Goods and Specialties ... Illustrated 666-668
"Indexo" Finger Tooth Brush of Rubber. Rubber Tires for Milk Cans. A Dainty Rubber Garter Self-Curing Tire Repair. Comb for Bobbed Hair.

New Goods and Specialties—Continued Pages
Rubber Shock Absorber for Revolvers. Rocking Chair Tips. Pump for Transferring Acid. The Cavex Cushion Tire. Roll-A-Bi Baby Car. Bathing Purse. De Luxe Helmet Diving Cap. Bathing Cap and Rubber Bandeau. Bathing Cap with Ear Pockets. Vacuum Top Bathing Cap.

American Rubber Trade—News and Personals
- Rubber Industry Outlook ... 669
- Dividends ... 669
- Stock Quotations ... 669
- Financial ... 669
- New Incorporations ... 670
- Herbert E. Smith ... Portrait and Sketch 670
- East and South ... 670-671
- New Jersey ... 671-672
- Rhode Island ... 672-673
- Massachusetts ... 673
- Akron Centennial Celebration ... Illustrated 674-675
- Ohio ... Illustrated 676-677
- Midwest ... 677
- Pacific Coast ... Illustrated 677-679
- Canada ... 679

Obituary Record ... 680
Edmund Whetmore Craft (Portrait). Hubert L. Terry (Portrait). James P. Loomis.

Foreign Rubber News
- Europe ... Illustrated 681-683

Planting
- Far East ... By Our Correspondent 684-685

Patents ... 686-688
United States. Canada. United Kingdom. Germany. New Zealand.

Trade Marks ... 688-689
United States. Canada. United Kingdom. New Zealand.

Designs ... 689
United States. Canada. Germany.

Labels ... 689
United States.

The Cotton Outlook ... 696

Markets
- Crude Rubber ... Graphs 690-691
- New York Closing Spot Rubber Prices ... 690
- Highest and Lowest New York Spot Rubber Prices ... 691
- Reclaimed Rubber ... 692
- Rubber Scrap ... 692
- Chemicals and Other Ingredients ... 693-694
- Cotton and Other Fabrics ... Graphs 695
- Metal Market Review ... 697

Report of Rims Inspected and Approved by the Tire & Rim Association ... 697

Statistics
- Dutch East Indies, Rubber Export ... 697
- Malaya, British Rubber Exports ... 692
- United Kingdom Rubber Statistics for May, 1925 701
- London and Liverpool Landings, Deliveries and Stocks ... 701
- United States
  - Exports of India Rubber Manufactures During May, 1925 ... 698-701
  - Crude Rubber Arrivals at New York as Reported by Importers ... 702-703
  - Custom House Statistics ... 700
  - Imports by Months, During 1925 ... 700
  - Statistics for May, 1925 ... 700

Pages
ng
he
ar.
ap.
ap
.. 669
.. 669
.. 669
.. 669
.. 670
ch 670
... 670-671
... 671-672
... 672-673
.. 673
ted 674-675
ted 676-677
.. 677
ted 677-679
.. 679
.. 680
L.
ted 681-683
ent 684-685
... 686-688
er-
... 688-689
ew
.. 689
.. 689
.. 696
hs 690-691
.. 690
er
... 691
... 692
.. 692
.. 693-694
hs 695
.. 697
ire
.. 697
.. 697
.. 692
25 701
nd
.. 701
ng
.. 698-701
Re-
... 702-703
.. 700
.. 700
.. 700